

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

RONALD A. KATZ TECHNOLOGY)
LICENSING, L.P.,)
)
Plaintiff,)
)
v.) C.A. No. _____
)
TD BANKNORTH INC.; EXPERIAN)
INFORMATION SOLUTIONS, INC.; COMERICA)
INCORPORATED; COMERICA BANK & TRUST,)
NATIONAL ASSOCIATION; COMERICA)
SECURITIES, INC.; CERIDIAN CORPORATION;)
COMDATA CORPORATION; DILLARD'S, INC.;)
DILLARD INVESTMENT CO., INC.; LASALLE)
BANK CORPORATION; LASALLE BANK)
NATIONAL ASSOCIATION; LASALLE)
FINANCIAL SERVICES, INC.; ABN AMRO)
MORTGAGE GROUP, INC.,)
)
Defendants.)
)

DEMAND FOR JURY TRIAL

**APPENDIX OF PATENTS TO PLAINTIFF RONALD A. KATZ
TECHNOLOGY LICENSING, L.P.'S COMPLAINT FOR PATENT INFRINGEMENT**

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EXHIBIT 16

**(12) United States Patent
Katz**

(10) Patent No.: US 6,424,703 B1
(45) Date of Patent: *Jul. 23, 2002

(54) TELEPHONIC-INTERFACE LOTTERY
SYSTEM

(75) Inventor: **Ronald A. Katz**, Los Angeles, CA (US)

(73) Assignee: **Ronald A. Katz Technology Licensing, L.P.**, Los Angeles, CA (US)

(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 09/021,956

(22) Filed: Feb. 11, 1998

Related U.S. Application Data

(63) Continuation of application No. 08/306,650, filed on Sep. 14, 1994, which is a continuation of application No. 07/756,956, filed on Sep. 9, 1991, now Pat. No. 5,365,575, which is a continuation-in-part of application No. 07/555,111, filed on Jul. 18, 1990, now Pat. No. 5,048,075, which is a continuation of application No. 07/342,506, filed on Apr. 24, 1989, now abandoned, which is a continuation of application No. 07/194,258, filed on May 16, 1988, now Pat. No. 4,845,739, which is a continuation-in-part of application No. 07/018,244, filed on Feb. 24, 1987, now Pat. No. 4,792,968, which is a continuation-in-part of application No. 06/753,299, filed on Jul. 10, 1985, now abandoned, said application No. 08/306,751, is a continuation-in-part of application No. 08/306,751, filed on Sep. 14, 1994, which is a continuation of application No. 08/047,241, filed on Apr. 13, 1993, now Pat. No. 5,351,285, which is a continuation of application No. 07/509,691, filed on Apr. 16, 1990, now abandoned, which is a continuation-in-part of application No. 07/640,337, filed on Jan. 11, 1991, which is a continuation of application No. 07/335,923, filed on Apr. 10, 1989, which is a continuation of application No. 07/194,258, which is a continuation-in-part of application No. 07/018,244, which is a continuation-in-part of application No. 06/753,299, said application No. 07/509,691, is a continuation-in-part of

application No. 07/260,104, filed on Oct. 20, 1988, now Pat. No. 4,930,150, which is a continuation-in-part of application No. 07/018,244, which is a continuation-in-part of application No. 06/753,299, filed on Jul. 10, 1985, now abandoned, said application No. 08/306,650, is a continuation of application No. 07/335,923, which is a continuation of application No. 07/194,258, which is a continuation-in-part of application No. 07/018,244, which is a continuation-in-part of application No. 06/753,299.

(51) Int. Cl.⁷ H04M 11/00

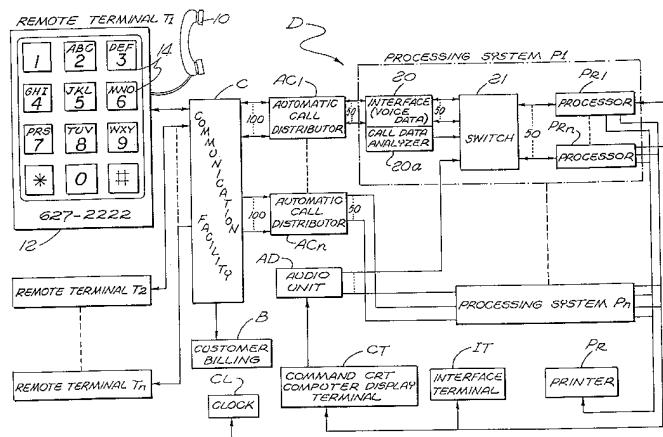
(52) U.S. Cl. 379/93.13

(58) **Field of Search** 379/93.13, 93.02,
379/93.03, 91.01, 91.02; 283/903, 102;
273/138.1, 139

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,902,541	A	9/1959	Singleton
2,941,161	A	6/1960	Scantlin
3,060,275	A	10/1962	Meacham et al.
3,076,059	A	1/1963	Meacham et al.
3,082,402	A	3/1963	Scantlin
3,128,349	A	4/1964	Boesch et al.
3,159,818	A	12/1964	Scantlin
3,246,082	A	4/1966	Levy
3,249,919	A	5/1966	Scantlin
3,299,210	A	1/1967	Bandy
3,337,847	A	8/1967	Olsson et al.
3,347,988	A	10/1967	Marill et al.
3,371,162	A	2/1968	Scantlin
3,381,276	A	4/1968	James
3,393,272	A	7/1968	Hanson
3,394,246	A	7/1968	Goldman
3,482,057	A	12/1969	Abbott et al.
3,515,814	A	6/1970	Morgan
3,544,769	A	12/1970	Hedin
3,556,530	A	1/1971	Barr
3,557,311	A	1/1971	Golstein
3,568,157	A	3/1971	Downing et al.
3,569,939	A	3/1971	Doblmaier et al.
3,571,799	A	3/1971	Coker, Jr. et al.
3,573,747	A	4/1971	Adams et al.
3,581,072	A	5/1971	Nymeyer
3,594,004	A	* 7/1971	Barr et al. 273/139
3,617,638	A	11/1971	Jochimsen et al.



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Page 2

3,618,038 A	11/1971	Stein	4,307,266 A	12/1981	Messina
3,624,292 A	11/1971	Guzak, Jr.	4,314,103 A	2/1982	Wilson
3,644,675 A	2/1972	Walton	4,317,961 A	3/1982	Johnson
3,647,973 A	3/1972	James et al.	4,320,256 A	3/1982	Freeman
3,651,480 A	3/1972	Downing et al.	4,323,770 A	4/1982	Dieulot et al.
3,656,113 A	4/1972	Lince	4,328,396 A	5/1982	Theis
3,665,107 A	5/1972	Kopeck et al.	4,338,494 A	7/1982	Theis
3,675,513 A	7/1972	Flanagan et al.	4,339,798 A	7/1982	Hedges et al.
3,688,126 A	8/1972	Klein	4,345,315 A	8/1982	Cadotte et al.
3,696,335 A	10/1972	Lemelson	4,348,554 A	9/1982	Asmuth
3,697,702 A	10/1972	Buonsante et al.	4,355,207 A	10/1982	Curtin
3,781,810 A	12/1973	Downing	4,355,372 A	10/1982	Johnson et al.
3,792,446 A	2/1974	McFiggins et al.	4,360,827 A	11/1982	Braun
3,794,774 A	2/1974	Kemmerly et al.	4,371,752 A	2/1983	Matthews et al.
3,800,283 A	3/1974	Gropper	4,376,875 A	3/1983	Beirne
3,858,032 A	12/1974	Scantlin	4,389,546 A	6/1983	Glisson et al.
3,870,821 A	3/1975	Steury	4,393,277 A	7/1983	Besen et al.
3,881,160 A	4/1975	Ross	4,398,708 A	8/1983	Goldman et al.
3,889,050 A	6/1975	Thompson	4,405,829 A	9/1983	Rivest et al.
3,909,553 A	9/1975	Marshall	4,420,656 A	12/1983	Freeman
3,912,874 A	10/1975	Botterell et al.	4,427,848 A	1/1984	Tsakanikas
3,914,747 A	10/1975	Barnes et al.	4,439,635 A	3/1984	Theis et al.
3,918,174 A	11/1975	Miller et al.	4,439,636 A	3/1984	Newkirk et al.
3,920,908 A	11/1975	Kraus	4,451,700 A	5/1984	Kempner et al.
3,928,724 A	12/1975	Byram et al.	4,468,528 A	8/1984	Reece et al.
3,934,095 A	1/1976	Matthews et al.	4,475,189 A	10/1984	Herr et al.
3,947,972 A	4/1976	Freeman	4,489,438 A	12/1984	Hughes
3,950,618 A	4/1976	Bloisi	4,490,583 A	12/1984	Bednarz et al.
3,974,338 A	8/1976	Luzier et al.	4,494,197 A	1/1985	Troy et al.
3,982,103 A	9/1976	Goldman	4,511,764 A	4/1985	Nakayama et al.
3,989,899 A	11/1976	Norwich	4,517,410 A	5/1985	Williams et al.
3,991,406 A	11/1976	Downing et al.	4,518,827 A	5/1985	Sagara
3,998,465 A	12/1976	Mascola	4,521,643 A	6/1985	Dupuis et al.
4,009,342 A	2/1977	Fahrenschon et al.	4,523,055 A	6/1985	Hohl et al.
4,012,599 A	3/1977	Meyer	4,532,378 A	7/1985	Nakayama et al.
4,017,835 A	4/1977	Randolph	4,539,435 A	9/1985	Eckmann
4,024,345 A	5/1977	Kochem	4,539,436 A	9/1985	Theis
4,054,756 A	10/1977	Cornella et al.	4,541,087 A	9/1985	Comstock
4,071,698 A	1/1978	Barger, Jr. et al.	4,544,804 A	10/1985	Herr et al.
4,078,316 A	3/1978	Freeman	4,547,851 A	10/1985	Kurland
4,088,838 A	5/1978	Nakata et al.	4,549,047 A	10/1985	Brian et al.
4,090,038 A	5/1978	Biggs	4,555,594 A	11/1985	Friedes et al.
4,108,361 A	8/1978	Krause	4,559,415 A	12/1985	Bernard et al.
4,117,278 A	9/1978	Ehrlich et al.	4,559,416 A	12/1985	Theis et al.
4,121,052 A	10/1978	Richard	4,562,342 A	12/1985	Solo
4,145,578 A	3/1979	Orriss	4,566,030 A	1/1986	Nickerson et al.
4,150,255 A	4/1979	Theis et al.	4,567,359 A	1/1986	Lockwood
4,152,547 A	5/1979	Theis	4,570,930 A	2/1986	Matheson
4,160,125 A	7/1979	Bower et al.	4,577,062 A	3/1986	Hilleary et al.
4,162,377 A	7/1979	Mearns	4,577,067 A	3/1986	Levy et al.
4,187,498 A	2/1980	Creekmore	4,578,700 A	3/1986	Roberts et al.
4,191,376 A	3/1980	Goldman	4,580,012 A	4/1986	Matthews et al.
4,191,860 A	3/1980	Weber	4,582,956 A	4/1986	Doughty
4,194,089 A	3/1980	Hashimoto	4,584,602 A	4/1986	Nakagawa
4,200,770 A	4/1980	Hellman et al.	4,585,906 A	4/1986	Matthews et al.
4,201,887 A	5/1980	Burns	4,586,707 A	5/1986	McNeight et al.
4,223,183 A	9/1980	Peters, Jr.	4,587,379 A	5/1986	Masuda
4,232,199 A	11/1980	Boatwright et al.	4,591,190 A	5/1986	Clark
4,241,942 A	12/1980	Bachman	4,591,664 A	5/1986	Freeman
4,242,539 A	12/1980	Hashimoto	4,592,546 A	6/1986	Fascenda et al.
4,243,844 A	1/1981	Waldman	4,594,476 A	6/1986	Freeman
4,255,618 A	3/1981	Danner et al.	4,598,367 A	7/1986	DeFrancesco et al.
4,260,854 A	4/1981	Kolodny et al.	4,603,232 A	7/1986	Kurland et al.
4,264,924 A	4/1981	Freeman	4,611,094 A	9/1986	Asmuth et al.
4,264,925 A	4/1981	Freeman et al.	4,614,367 A	9/1986	Breen
4,270,024 A	5/1981	Theis et al.	4,625,079 A	11/1986	Castro et al.
4,277,649 A	7/1981	Scheinbein	4,625,276 A	11/1986	Benton et al.
4,290,141 A	9/1981	Anderson et al.	4,630,200 A	12/1986	Ohmae et al.
4,299,637 A	11/1981	Oberdeck et al.	4,630,201 A	12/1986	White
4,302,810 A	11/1981	Bouricius et al.	4,634,809 A	1/1987	Paulsson et al.
4,303,804 A	12/1981	Johnson et al.	4,635,251 A	1/1987	Stanley et al.

US 6,424,703 B1

Page 3

4,645,873 A	2/1987	Chomet	4,894,857 A	1/1990	Szlam et al.
4,649,563 A	3/1987	Riskin	4,896,345 A	1/1990	Thorne
4,652,998 A	3/1987	Koza	4,897,867 A	1/1990	Foster et al.
4,654,482 A	3/1987	DeAngelis	4,899,375 A	2/1990	Bauer et al.
4,658,417 A	4/1987	Hashimoto et al.	4,907,079 A	3/1990	Turner et al.
4,663,777 A	5/1987	Szeto	4,908,761 A	3/1990	Tai
4,665,502 A	5/1987	Kreisner	4,908,850 A	3/1990	Masson et al.
4,669,730 A	6/1987	Small	4,922,520 A	5/1990	Bernard et al.
4,671,512 A	6/1987	Bachman et al.	4,922,522 A	5/1990	Scanlon
4,674,044 A	6/1987	Kalmus et al.	4,937,853 A	6/1990	Brule et al.
4,677,552 A	6/1987	Sibley, Jr.	4,942,598 A	7/1990	Davis
4,677,553 A	6/1987	Roberts et al.	4,942,599 A	7/1990	Gordon et al.
4,685,123 A	8/1987	Hsia et al.	4,942,616 A	7/1990	Linstroth et al.
4,688,170 A	8/1987	Waite et al.	4,943,995 A	7/1990	Dandelin et al.
4,692,817 A	9/1987	Theis	4,955,047 A	9/1990	Morganstein et al.
4,694,490 A	9/1987	Harvey et al.	4,959,783 A	9/1990	Scott et al.
4,696,028 A	9/1987	Morganstein et al.	4,961,217 A	10/1990	Akiyama
4,696,029 A	9/1987	Cohen	4,964,157 A	10/1990	Aoshima
4,697,282 A	9/1987	Winter et al.	4,965,825 A	10/1990	Harvey et al.
4,704,725 A	11/1987	Harvey et al.	4,969,183 A	11/1990	Reese
4,706,275 A	11/1987	Kamil	4,969,185 A	11/1990	Dorst et al.
4,715,061 A	12/1987	Norwich	4,972,461 A	11/1990	Brown et al.
4,716,583 A	12/1987	Groner et al.	4,974,252 A	11/1990	Osborne
4,719,647 A	1/1988	Theis et al.	4,975,945 A	12/1990	Carbullido
4,722,526 A	2/1988	Tovar et al.	4,989,233 A	1/1991	Schakowsky et al.
4,745,468 A	5/1988	Von Kohorn	4,992,940 A	2/1991	Dworkin
4,748,668 A	5/1988	Shamir et al.	4,996,705 A	2/1991	Entenmann et al.
4,756,020 A	7/1988	Fodale	5,000,486 A	*	3/1991 Run, Jr. et al. 283/903
4,757,267 A	7/1988	Riskin	5,001,710 A	3/1991	Gawrys et al.
4,761,684 A	8/1988	Clark et al.	5,003,574 A	3/1991	Denq et al.
4,763,191 A	8/1988	Gordon et al.	5,014,298 A	5/1991	Katz
4,764,666 A	8/1988	Bergeron	5,017,917 A	5/1991	Fisher et al.
4,766,604 A	8/1988	Axberg	5,018,736 A	5/1991	Pearson et al.
4,774,655 A	9/1988	Kollin et al.	5,023,904 A	6/1991	Kaplan et al.
4,781,377 A	11/1988	McVean et al.	5,046,183 A	9/1991	Dorst et al.
4,782,510 A	11/1988	Szlam	5,083,272 A	1/1992	Walker et al.
4,783,796 A	11/1988	Ladd	5,097,528 A	3/1992	Gursahaney et al.
4,783,800 A	11/1988	Levine	5,109,414 A	4/1992	Harvey et al.
4,785,408 A	11/1988	Britton et al.	5,127,003 A	6/1992	Doll, Jr. et al.
4,788,682 A	11/1988	Vij et al.	5,146,491 A	9/1992	Silver et al.
4,788,715 A	11/1988	Lee	5,181,238 A	1/1993	Medamana et al.
4,788,716 A	11/1988	Zebe	5,233,654 A	8/1993	Harvey et al.
4,788,718 A	11/1988	McNabb et al.	5,255,183 A	10/1993	Katz
4,789,928 A	12/1988	Fujisaki	5,263,723 A	11/1993	Pearson et al.
4,791,664 A	12/1988	Lutz et al.	5,333,185 A	7/1994	Burke et al.
4,792,968 A	12/1988	Katz	5,335,277 A	8/1994	Harvey et al.
4,796,293 A	1/1989	Blinken et al.	5,351,276 A	9/1994	Doll Jr., et al.
4,797,910 A	1/1989	Daudelin	5,353,335 A	10/1994	D'Urso et al.
4,797,911 A	1/1989	Szlam et al.	5,403,999 A	*	4/1995 Entenmann et al. 379/93.13
4,797,913 A	1/1989	Kaplan et al.			
4,799,156 A	1/1989	Shavit et al.			
4,800,583 A	1/1989	Theis	AU	66113/81	7/1981
4,805,209 A	2/1989	Baker, Jr. et al.	CA	1022674	12/1977
4,812,843 A	3/1989	Champion, III et al.	CA	1025118	1/1978
4,815,031 A	3/1989	Furukawa	CA	1056500	6/1979
4,815,121 A	3/1989	Yoshida	CA	1059621	7/1979
4,815,741 A	3/1989	Small	CA	1162336	2/1984
4,827,500 A	5/1989	Binkerd et al.	CA	1225759	8/1987
4,832,341 A	*	5/1989 Muller et al. 273/139	CA	2009937-2	8/1990
4,842,278 A	6/1989	Markowicz	DE	OS 2929416	2/1981
4,845,739 A	7/1989	Katz	DE	OS 3726366	2/1988
4,847,890 A	7/1989	Solomon et al.	DE	4005365 A1	8/1990
4,852,154 A	7/1989	Lewis et al.	EP	0 120 322	2/1984
4,853,882 A	8/1989	Marshall	EP	0 229 170 A	7/1987
4,856,050 A	8/1989	Theis et al.	EP	Pub. 0249575	12/1987
4,866,756 A	9/1989	Crane et al.	EP	Pub. 0295837	12/1988
4,876,717 A	10/1989	Barron et al.	EP	Pub. 0342295	11/1989
4,876,892 A	10/1989	Von Kohorn	EP	Pub. 0434181	6/1991
4,882,473 A	11/1989	Bergeron et al.	EP	0 568 114 A	11/1993
4,893,328 A	1/1990	Peacock	EP	0 620 669 A	10/1994
4,893,330 A	1/1990	Franco	FR	9002131	8/1990

FOREIGN PATENT DOCUMENTS

US 6,424,703 B1

Page 4

GB	2184327 A	6/1987
GB	2 230 403 A	10/1990
JP	Pub. 52-17740	9/1977
JP	Pub. 56-152365	11/1981
JP	Pub. 62-239757	10/1987
JP	500138/88	1/1988
JP	298158/90	12/1990
JP	41855/91	2/1991
WO	WO 87/00375	1/1987
WO	WO88/02966	4/1988
WO	WO88/05985	8/1988
WO	WO89/02139	3/1989
WO	WO89/09530	10/1989
WO	WO93/05483	3/1993

OTHER PUBLICATIONS

- Basinger, R. G., et al., "Calling Card Service—Overall Description and Operational Characteristics", *The Bell System Technical Journal*, Sep., 1982.
- Confalone, D. E., et al, "Calling Card Service—TSPS Hardware, Software, and Signaling Implementation", *The Bell System Technical Journal*, Sep., 1982.
- Eigen, D.J., et al., "Calling Card Service—Human Factors Studies", *The Bell Technical Journal*, Sep., 1982.
- Lexis Search, Nov. 1, 1984, re: System 85 Computer Process.
- Lexis Search, Jan. 28, 1985, re: Rolm Releases Four-Channel Phonemail Voice Message Unit.
- "The AT&T Multi-Mode Voice Systems—Full Spectrum solutions . . ." by Hester et al., Sep. 1985.*
- Lexis Search Results (Great American Potato-Chip give-away/Raisin Bran Game/Giants Baseball Trivia—Dial Info): "In The Chips" AdWeek, Jul. 22, 1985.
- "San-Fran-Police-League", Business Wire, Aug. 2, 1985.
- "Similar Campaigns", DM News, Dec. 15, 1985.
- "Phone Offers Action At Push Of Button", Advertising Age, Feb. 6, 1986.
- Boles, Stephen J., "A Computer Based Audio Communication System", Computer Sciences Department, Thomas J. Watson Research Center, Yorktown Heights, New York, USA, pp. 701-704—(Article) (Undated).
- Winckelmann, W.A., "Automatic Intercept Service", *Bell Laboratories Record*, May 1968, vol. 46, No. 5, pp. 138-143—Article.
- "Proposed Agreement Between National Enterprises Board (N.E.B.) and Delphi", Jan. 30, 1979.
- Voysey, Hedley, "Nexos wins rights to comms engine", *Computing*, Sep. 6, ??, vol. 7, No. 36—(Article).
- "Appraisal Of The Fair Market Value Of Delphi Communications", Apr. 30, 1980—(Study) Delphi Communications—(Charts and Exhibits).
- "Voice-Response System Improves Order Entry, Inventory Control", *Communication News*, Aug. 1976—(Article).
- "Periphonics VoicePak"—(Brochure) (Undated).
- "The Voice Response Peripheral That Turns Every Touch-Tone Telephone Into A Computer Terminal", Periphonics Corporation—(Brochure) (Undated).
- Rabin, Jeff, "Minorities Seek 30% Share of All Lottery Operations", *Sacramento Bee*, Apr. 12, 1985—(Article).
- Advertisements (Dial Giants Baseball Trivia Game): *San Francisco Chronicle*, Jul. 3, 1984.
- Curtis, Cathy, "976 numbers let you dial—a-whatever", *San Francisco Business Journal*, Nov. 26, 1984—(Article).
- Ferrell, Jane, "Three little numbers for instant information", *San Francisco Chronicle*, Aug. 15, 1984—(Article).
- "Dallas Telephone Call-In Game Uses Computer Voice Interface", Sep. 24, 1984—(Press Release).
- Rivest, R.L., et al., "A Method for Obtaining Digital Signatures and Public-Key Cryptosystems", *Communications of the ACM*, Feb. 1978, vol. 21, No. 2, pp. 120-126—(Article).
- Finnigan, Paul F, "Audiotex: The telephone as data-access equipment", *Data Communications*, 1987, pp. 155-161 (Article).
- Ozawa, Y., et al., "Voice Response System and Its Applications", *Hitachi Review*, Dec. 1979, vol. 28, No. 6, pp. 301-305—(Article).
- "AT&T 2: Reaches agreement with Rockwell (ROK)", Aug. 26, 1986—Press Release).
- "AT&T: Expands Computer speech system product line", Apr. 14, 1986—(Press Release).
- Adams, Cynthia, "Conversing With Computers", *Computerworld on Communications*, May 18, 1983, vol. 17, No. 20A, pp. 36-44—(Article).
- Hester, S.D., et al., "The AT&T Multi-Mode Voice Systems—Full Spectrum Solutions For Speech Processing Applications", Sep. 1985, pp. 1-10—(Proceedings Of The 1985 AVIOS Conference).
- Davidson, Leon, "A Pushbutton Telephone For Alphanumeric Input", *Datamation*, Apr. 1966, pp. 27-30—(Article).
- Advertisement: Cuervo Gold Beach Chair—VoiceMail Int'l, '83.
- "Digital's All-In-1 Voice Messaging", *Digital*—(Brochure) (Undated).
- "Access Voice and Mail Messages From One Familiar Source", *Insight*,—(Article) (Undated).
- "Get The Message . . . !" "New VoiceMail Features", *VoiceMail International, Inc.*, Oct. 1984—(Article).
- Brochures (TWA Crew Scheduling/PSA's Reservation System/Universal Studios Program/Dow Phone): "AVIAR The communication system that keeps you flying", VoiceMail Int'l—(Brochure) (Undated).
- "TWA VoiceMail, Flight Attendants Users Guide" Aug. 1986,—(Brochure).
- Holtzman, Henry, "Voice Mail Soars at TWA", *Modern Office Technology* (Reprint), Mar. 1986,—(Article).
- "Bid Results via VoiceMail—Flight Deck Crew Members", May 1, 1985 (Script).
- Borden, W.S., "Flight Attendant Self Input Of Monthly Bids Via Touch Tone Telephone", *In-Flight Services Bulletin*, Sep. 15, 1985—(Memo).
- "Look Ma, no opertors! Automatic voice system does many airline jobs", *Air Transport World*, Oct. 1986—(Article).
- "1,000,000 Shares Common Stock" *VoiceMail International, Inc.*, Jan. 10, 1984—(Public Offering Summary).
- Levinson, S.E., et al., "A Conversational-Mode Airline Information and Reservation System Using Speech Input and Output", *The Bell System Technical Journal*, Jan. 1980, vol. 59, No. 1, pp. 119-137.
- Emerson, S.T., "Voice Response Systems—Technology to the Rescue for Business Users", *Speech Technology*, Jan./Feb. '83, pp. 99-103—(Article).
- Moslow, Jim, "Emergency reporting system for small communities", *Telephony*, Feb. 11, 1985, pp. 30-32, 34—(Article).
- Rabiner, L.R., et al., "Digital Techniques for Computer Voice Response: Implementation and Applications", *Proceedings of The IEEE*, Apr. 1976, vol. 64, No. 4, pp. 416-432—(Article).
- Moosemiller, J.P., "AT&T's Conversant™ I Voice System" *Speech Technology*, Mar./Apr. 1986, pp. 88-93—(Article).
- Frank, R.J., et al., "No. 4 ESS: Mass Announcement Capability", *The Bell System Technical Journal*, Jul./Aug. 1981, vol. 60, No. 6, Part 2, pp. 1049-1081—(Chapter from a Book).

US 6,424,703 B1

Page 5

- “Chapter I General Description” D.I.A.L. PRM/Release 3—Version 2, Mar. 1987 (Product Reference Manual).
- “Announcing Release 3.3” D-A-S-H-D.I.A.L. Application and Support Hints, Jan./Feb. Mar. 1987, vol. 3, No. 1—(Brochure).
- “D.I.A.L. Software Relase 4”, OPCOM, Jan. 1988, Version 1—(Product Reference Manual).
- Brady, R.L., et al., “Telephone Identifier Interface”, *IBM Technical Disclosure Bulletin*, Oct. 1976, vol. 19, No. 5, pp. 1569–1571—(Article).
- Corbett, A.J., “Telephone Enquiry System Using Synthetic Speech”, University of Essex, Dec. 1974, (Thesis).
- Yoshizawa, K., et al., “Voice Response System for Telephone Betting”, *Hitachi Review*, Jun. 1977, vol. 26, No. 6 —(Article).
- Sagawa, S., et al., “Automatic Seat Reservation By Touch-Tone Telephone”, Second USA Japan Computer Conference, 1975, vol. 2, pp. 290–294—(Article).
- Smith, S.L., “Computer-Generated Speech and Man-Computer Interaction”, *Human Factors*, 1970, 12(2), pp. 215–223—(Article).
- Newhouse, A., et al., “On The Use Of Very Low Cost Terminals”, University of Houston, pp. 240–249—(Paper) (Undated).
- Mullen, R.W., “Telephone—home’s ‘friendliest’ Computer”, *Inside Telephone Engineer And Management*, May 15, 1985, vol. 89, No. 10,—(Article).
- “Telephone Computing Entering Service Bureau Business”, *American Banker*, Jul. 5, 1979—(Article).
- Kutler, Jeffrey, “Technology, System Sharing Improve Phone Banking Outlook”, *American Banker*, Dec. 7, 1979, vol. CXLIV, No. 237—(Article).
- Kutler, Jeffrey, “Phone Bill Paying Accessed by Pioneer”, *American Banker*, Dec. 7, 1979, vol. CXLIV, No. 237—(Article).
- “User’s Guide”, Dowphone (Undated).
- “Audiotex Information From Dow Jones”, *The Computer Review*, Nov. 1984, vol. 2, No. 1—(Article).
- “Dow Phone Adds Innovest Systems’ Technical Analysis Reports” IDP Report, Jan. 3, 1986—(Report).
- Perdue, R.J., et al., “Conversant 1 Voice System: Architecture and Applications”, *AT&T Technical Journal*, Sep./Oct. 1986—(Article).
- Martin, James, “Design of Man-Computer Dialogues”, *IBM System Research Institute*, Chapter 16, pp. 283–306—(Chapter from a Book) (Undated).
- Kaiserman, D.B., “The Role Of Audio Response In Data Collection Systems”, *Proceedings of the Technical Sessions*, Paleis des Expositions, Geneva, Switzerland, Jun. 17–19, 1980, pp. 247–251—(Article).
- Boies, S.J., et al., “User Interface for Audio Communication System”, IBM Technical Disclosure Bulletin, Dec. 1982, vol. 25, No. 7A, pp. 3371–3377—(Article).
- Kramer, J.J., “Human Factors Problems in the Use of Pushbutton Telephones for Data Entry”, Bell Telephone Laboratories, Holmdel, N.J., Apr. 74, pp. 241–258—(Paper).
- Cox, Jr., Floyd, “Flora Fax”, Jan. 22, 1986—(Letter and Advertisements).
- Isayama, Tetsuya, “Automatic Response Processing Equipment as a Multi-media Communication Node”, *Japan Telecommunications Review*, 1987, vol. 29, No. 1, pp. 29–36—(Article).
- Imai, Y., et al., “Shared Audio Information System Using New Audio Response Unit” *Japan Telecommunications Review*, Oct. 1981, vol. 23, No. 4, pp. 383–390—(Article).
- “Distrust of computer kills home service plan” (date and source missing).
- “Automatic Call Distributor/Management Information System: Interface between 1/1AESST™ Switch Central Office and Customer Premises Equipment”, *Bell Communications Research*, Dec. 1986, Technical Reference TR-TSY-000306, Issue 1—(Article).
- “Comparison Of ACD Systems”, *Connection*, Feb. 1990—(Chart).
- “ACD Comparison”, *Aspect*, Feb. 2, 1990—(Final Report).
- “AT&T’s Response to Plaintiff’s Second Set of Interrogatories to Defendant AT&T Corp. (Nos. 17–18)”, Ronald A. Katz Technology Licensing, L.P. and MCI Telecommunications Corp., Civil Action No. 97–4453 (USDC, ED PA).
- Lanzeter, Ygal, “Automatic Number Identification System For Step-By-Step Exchanges”, The Ninth Convention of Electrical and Electronics Engineers In Israel, Apr. 1975—(Paper).
- Flanagan, J.L., et al., “Speech Synthesis”, Chapters 1, 39, 42, 45 and 46—(Chapter from a Book).
- “Bell Atlantic’s Bolger Wants To Be Free”, *Telephony*, Jul. 14, 1986—(Article).
- “Advanced New Cable TV Technology Developed For Impulse Pay-Per-View”, Jun. 3, 1985—(Search).
- Noll, M.A., “Introduction to Telephones & Telephone Systems”, Second Edition, Chapter 9—(Chapter from a Book).
- “Proposal for Kome Mediavoice Interactive Phone/Database Marketing System”, “Mediavoice Startup Software Package For Kome”.
- “Optional Mediavoice Software Packages For Kome”.
- “Why ATT Mediavoice Is The Choice For Success”—(Proposal).
- Meade, Jim, Dec. 29, 1992—(Letter).
- “All About Voice Response”, Datapro Research Corporation, Delran, N.J., Mar. 1972 and Sep. 1974—(Article).
- “Voice Response in Banking Applications”, Datapro Research Corporation, Delran, N.J., Oct. 1974 and Feb. 1983—(Article).
- Schiller, T.R., “Field Craft Technician Communication With A Host Computer Synthesized Voice”, Proceedings AVIOS ’86 Voice I/O Systems Applications Conference, Sep. 16–18, 1986.
- Rabin, Richard, “Telephone Access Applications: The Growth Market For Voice Processing”, Proceedings AVIOS ’86 Voice I/O Systems Applications Conference, Oct. 6–8, 1987.
- Schuster, E.R., “B.R.U.T.U.S. Better Registration Using Touch-Tone phones for University Students”, Proceedings AVIOS ’86 Voice I/O Systems Applications Conference, Oct. 4–6, 1988.
- “Exxon’s Next Prey, IBM and Xerox”, *Business Week*, Apr. 28, 1980, pp. 92–96 and 103—(Article).
- Weinstein, S.B., “Emerging Telecommunications Needs of the Card Industry”, *IEEE Communications Magazine*, Jul. 1984, vol. 22, No. 7, pp. 26–31—(Article).
- “Riding Gain”, *Broadcasting*, Mar. 7, 1983—(Article).
- Pickup, Mike, “Bank from home, by screen or by phone”, *Building Society Gazette*, Jul. 1988)—(Article).
- Pickup, Mike, “Voice Response”, *Computer Systems*, Sep. 1986—(Article).
- Rabiner, L.R., et al., “Isolated and Connected Word Recognition—Theory and Selected Applications”, *IEEE Transaction Communications*, May 1981, Com. 29, No. 5, pp. 621, 622, 633, 644–646, 655–659—(Article).
- Takahashi, K., et al., “The Audio Response System for Telephone Reservation”, U.D.C. Oka, Y., et al., “Development of Ventilating Equipment for Shinkansen Train”, U.D.C.—(Articles in Japanese).
- Pagones, M.J., et al., “New services follow increased digitization on the long-haul transmission network”, *AT&T Bell Laboratories Record*, 1983, vol. 61, pp. 25–33—(Article).

US 6,424,703 B1

Page 6

- "New phone service tells customer who's calling", *Bell Laboratories Record*, 1984, vol. 62, p. 9—(Article).
- Hirschman, C.B., et al., "LASS: Putting the telephone customer in charge", *Bell Laboratories Record*, 1985, vol. 63, pp. 10–16—(Article).
- "AT&T building communications network for Defense Department" and "AT&T inauguates pay-per-view TV", *Bell Laboratories Record*, 1986, vol. 64, p. 2—(Article).
- "Power To . . .", Dialogic Corporation, Littleton Road,—(unidentifiable Article).
- "Representative Customer List For Interface Technology's Total Entry System", "Toes Solutions—Pharmaceutical Manufacturer", "The Voice Response Solution For Answering Customer/Sales Calls", "Toes Solutions—Orthopedic Equipment" and "Toes Solutions—Convenience Store"—(Articles).
- Lummis, R.C., "Speaker Verification: A Step Toward the "Checkless" Society", *Bell Laboratories Record*, pp. 254–259—(Article).
- Flanagan, J.L., et al., "Synthetic voices for computers", *IEEE Spectrum*, Oct. 1970, vol. 7, No. 10, pp. 22–45—(Article).
- Rabiner, L.R., et al., "Computer Synthesis of Speech by Concatenation of Formant-Coded Words", *The Bell System Technical Journal*, May/Jun. 1971, pp. 1541–1558—(Chapter from a Book).
- Flanagan, J.L., et al., "Wiring Telephone Apparatus from Computer-Generated Speech", *The Bell System Technical Journal*, Feb. 1972, pp. 391–397—(Chapter from a Book).
- Homsby, Jr., Thomas G., "Voice Response Systems", *Modern Data*, Nov. 1972, pp. 46–50—(Article).
- Diffee, W., et al., "New Directions in Cryptography", *IEEE Transactions On Information Theory*, Nov. 1976, vol. IT-22, No. 6, pp. 644–654—(Article).
- Rosenthal, L.H., et al., "Automatic voice response: interfacing man with machine", *IEEE Spectrum*, Jul. 1974, vol. 11, No. 7—(Article).
- Rosenthal, L.H., et al., A Multiline Computer Voice Response System Utilizing ADPCM Coded Speech, *IEEE Transactions on Acoustics, Speech, and Signal Processing*, Oct. 1974, vol. ASSP-22, No. 5, pp. 339–352—(Article).
- Flanagan, James L., "Computers that Talk and Listen: Man-Machine Communication by Voice", *Proceedings for the IEEE*, Apr. 1976, vol. 64, No. 4, pp. 405–415—(Article).
- Maisel, Ivan, "To Put Your Baseball Savvy On The Line, Pick Up The Phone And Call", *Sports Illustrated*, Sep. 3, 1984—(Script).
- Brown, Merrill, "Hollywood Saga: Who Bought J.R.?", *The Washington Post*, Final Edition, Oct. 14, 1984—(Script).
- "Special Olympics: Teams with baseball trivia except Brad Curtis", *Business Wire*, Sep. 30, 1985—(Script).
- Lucas, W.A., et al., "The Spartanburg Interactive Cable Experiments In Home Education", Rand Corp., U.S. Department of Commerce, National Technical Information Service, Feb., 1979—(Publication).
- Martin, James, "Viewdata And The Information Society",—(Book).
- Gawrys, G.W., "Ushering In The Era Of ISDN", *AT&T Technology*, 1986, vol. 1, No. 1, pp. 2–9—(Article).
- Cummings, J.L., et al., "AT&T Network Architecture Evolution", *AT&T Technical Journal*, May/Jun. 1987, vol. 66, Issue 3, pp. 2–12—(Article).
- Yates, C.E., "Telemarketing And Technology: Perfect Business Partners", *AT&T Technology*, 1987, vol. 1, No. 3, pp. 48–55—(Article).
- Herr, T.J., "ISDN Applications In Public Switched Networks", *AT&T Technology*, 1987, vol. 2, No. 3, pp. 56–65—(Article).
- "Only the best. Only from Florafax", Florafax—(Advertisement).
- Aldefeld, B., et al., "Automated Directory Using Retrieval System Based on Isolated Word Recognition", *Proceedings of the IEEE*, Nov. 1980, vol. 68, No. 11, pp. 1364–1379—(Article).
- Rabiner, L.R., et al., "On the Application of Embedded Training to Connected Letter Recognition for Directory Listing Retrieval", *AT&T Bell Laboratories Technical Journal*, Mar. 1984, vol. 63, No. 3, pp. 459–477—(Chapter from a Book).
- Rosenberg, A.E., et al., "Recognition of Spoken Spelled Names for Directory Assistance Using Speaker-Independent Templates", *The Bell System Technical Journal*, Apr. 1980, vol. 59, No. 4, pp. 571–592—(Chapter from a Book).
- "The Voicestar Series By Periphonics", Periphonics, Jan. 1986—(Publication).
- "Bank-From-Home system by Periphonics Corporation".
- "Bill Payment Success Story", Periphonics Corporation.
- "A History of Imagination", Periphonics Corporation.
- "Banking Success Story", Periphonics.
- "DataVoice and the PDT II", Periphonics Corporation.
- "Banking Success Story", Periphonics Corporation—(Brochures).
- Schulman, Roger, "TeleLearning: The Computer Brings the Classroom Home", *Family Computing*, Sep. 1984, pp. 50–58—(Article).
- "ICS launches new ?-home interactive video service package", *Cable Vision*, Sep. 3, 1984, pp. 71/73—(Article).
- "The Remarketing of Prestel", *Which Computer?*, Aug. 1984, pp. 106, 107 and ?—(Article).
- "Four-Line TeleClerk Calls, Answers, Stores, Surveys", *Hardcopy*, Jan. 1985, vol. 14, No. 1—(Article).
- "Peripheral Speaks On Phone", *Hardcopy*, Dec. 1984—(Article).
- Page from *What's new in Computing*, Apr. 1985—(Article).
- Page from *Today*, A Compuserve Publication, Jun. 1985—(Article).
- Page from *Computer Communications*, Feb. 1984, vol. 7, No. 1—(Article).
- Gits, Victoria, "Interactive device doesn't interrupt telephone calls", *Cable Vision*, Jun. 17, 1985, p.20—(Article).
- Cuilwik, Tony, "Reach Out & Touch The Unix System", *Unix Review*, Jun. 1985, pp. 50, 52, 53, 56—(Article).
- Blackwell, Gerry, "Dial-a-Quote: first Canadian commercial audiotext service", *Computing Canada*—(Article).
- Applebaum, Simon, "Two-way television" *Cable Vision*, Aug. 8, 1983, p. 66—(Article).
- Sw??ne, Michael, "Fiber-optic TV network lets viewers talk back", *Info World*—(Article).
- Morrill, C.S., et al., "User Input Mode and Computer-Aided Instruction", *Human Factors*, 1968, 10(3), pp. 225–232—(Chapter from a Book).
- Results of Lexis Search Request for "Dial Info or Dialinfo", Date of Search Apr. 13, 1992, pp. 1–38.
- Results of Lexis Search Request for "Phone Programs or International Information Network", Date of Search Apr. 15, 1992, pp. 1–35.
- Van Giesen, Jr. W.D., et al., "Machine-Generated Speech For Use With Computers, and the problem of fitting a spoken word into one half second", *Computers and Automation*, Nov. 1968, pp. 31–34—(Article).
- Patel, Jay, "Utility of voice response system depends on its flexibility", *Bank Systems & Equipment*, Dec. 1988, pp. 101/103—(Article).
- Buron, R.H., "Generation of a 1000-Word Vocabulary for a Pulse-Excited Vocoder Operating as an Audio Response Unit", *IEEE Transactions On Audio And Electroacoustics*, Mar. 1986, vol. AU-16, No. 1, pp. 21–25—(Article).

US 6,424,703 B1

Page 7

- Gaines, B.R., et al., "Some Experience in Interactive System Development and Application", *Proceedings of the IEEE*, Jun. 1975, vol. 63, No. 6, pp. 894-911—(Article).
- "Application For Registration Of Equipment To Be Connected To The Telephone Network", Federal Communication Commission, FCC Form 730.
- Dudley, Homer, "The Vocoder", Circuit Research Department, Dec. 1939, pp. 122-128—(Chapter from a Book).
- "Voice Response System Order Entry, Inventory Control". "Vendor Index", *Audiotex Directory & Buyer's Guide*, Fall/Winter 1989/90, pp. 114-156.
- Francas, M., et al., "Input Devices For Public Videotex Services", Human-Computer Interaction—Interact '84, 1985, pp. 171-175—(Paper).
- Labrador, C., et al., "Experiments In Speech Interaction With Conventional Data Services", *Human-Computer Interaction—Interact '84*, 1985, pp. 225-229—(Paper).
- Long, J., et al., "Transaction Processing Using Videotex or: Shopping on Prestel", Human-Computer Interaction—Interact '84, 1985, pp. 251-255 —(Paper).
- Electrical Communication, 1981, vol. 56, Nos. 1-4, pp. 1-110—(Paper).
- Conway, R.W., et al., "Tele-CUPL: A Telephone Time Sharing System", *Communications of the ACM*, Sep. 1967, vol. 10, No. 9, pp. 538-542 —(Article).
- Marill, T., et al., "Data-Dial Two-Way Communication with Computers From Ordinary Dial Telephones" *Communications of the ACM*, Oct. 1963, vol. 6, No. 10, pp. 622-624—(Article).
- Witten, I.H., "Communicating With Microcomputers", pp. 121-158—(Chapter from a Book).
- "Call-It-Co. Hangs Up On Dial-It In Four Markets", *The 976 Exchange*, 1984, vol. 2, pp. 1-6 (Article).
- "DECtalk Help Boston's Shawmut Bank Cut Costs And Improve Service", *Digital*—(Article).
- "VTK 81 Voice Computer", *VoiceTek*, 1987 (Brochure).
- "How a Computerized "Voice" Answers Customers' Inquiries", *Bank Automation Newsletter*, Feb. 1985, vol. 19, No. 2 (Article).
- Rickman, J., et al., "Speech Synthesizers—Communications Interface—Implementing a Touch Tone Telephone Talker With DECTalk", *The DEC Professional*, May 1985, pp. 38, 39, 42-44 (Article).
- "DECTalk Delivers", *Digital Review*, Sep. 1985—(Article).
- "DECTalk turns a telephone into a terminal",—"UNIX and Digital",—"Legal protection for semiconductor chips",—"Product safety",—*DECWorld*, Apr. 1985, vol. 9, No. 2, pp. 1,3,5,6-8—(Article).
- "DECTalk: A New Text-to-Speech Product" *Digital Guideline*, Mar. 1984, vol. 8, No. 3, pp. 1-8—(Article).
- Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 1, pp. 1-6.
- Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 2, pp. 1-7.
- Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 3, pp. 1-8.
- Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 4, pp. 1-8.
- Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 2, No. 2, pp. 1-8.
- Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 2, No. 4, pp. 1-8.
- Various References/Articles attached with a letter from Smithwin Associates, dated Apr. 22, 1992.
- Riley, A.A., "Latest: 2-way communication by computer and telephone".
- ??evens, W.?, "Computer Helps Children to Add", *The New York Times*, Apr. 20, 1970.
- Harvey, R.W., *Times*, The Kiplinger Magazine.
- "A Computerized System ???", Nov. 23, 1970, p. 14, (unidentifiable Article).
- "Hardware for a "cashless society", *Electronic Design* 3, Feb. 4, 1971, p. 26.
- Tennant, R.P., "Advanced credit system smooths operation and hastens payout", *Data Processing Magazine*, Jun. 1971, vol. 13, No. 6, pp. 34-35.
- "Computers that talk back to you", *Business Week*, Date ??.
- Smith, Gene, "Chatting Via Computer", *The New York Times*, Sep. 12, 1971.
- EDP Weekly*, (Unidentifiable Article).
- "Did Anybody Here Call a Computer", *Data Management*, Feb. 1967.
- Skala, Martin, "Straight talk from a computer", *Christian Science Monitor*, Jun. 14, 1973.
- "Computer for Watergate Probe", *Science*, Jun. 15, 1973.
- "Tapping AT&T for a \$50-million refund", *Business Week*, Jun. 9, 1973.
- "Distrust of computer kills home service plan".
- Scherer, Ron, "Chitchat with a computer", *Christian Science Monitor*, Apr. 16, 1975, p. 2.
- "Trying Out the Pay-by-Phone Service", *Technology Review*, Mar./Apr. 1975, p. 15.
- "Pentagon seeks more control", *Electronics*, Apr. 5, 1976, p. 39.
- "Everyman's Computer Terminal", *Industrial Research*, Mar./Apr. 1976, p. 14.
- "DOD could save on test equipment"
- "Talking computer speeds Ford parts", Apr. 25, 1976.
- "Customers of Ten Banks Paying Bills by Phone", *Computer World*, 1976, p. 12.
- "FAA to test computerized voice response to queries from pilots", *Electronics*, Nov. 25, 1976, p. 43.
- Miller, F.W., "Voice Response Comes to Life with Order Entry", *Infosystems*, Oct. 1981, pp. 62/64.
- Suppes, Patrick, "University-Level Computer Assisted Instruction At Stanford: 1968-1980", *Institute for Mathematical Studies in The Social Sciences, Stanford University*, 1981, pp. 589-716.
- Lerner, E.J., "Products that talk", *IEEE spectrum*, Jul. 1982, pp. 32-37.
- Carlsen, Clifford, "Megaphone plans to blare message on national scale", *Times*, Mar. 2, 1987.
- Michelson, Marlene, "All kinds of information at your fingertips by phone", *Business Times*, Sep. 8, 1986, vol. 3, No. 19.
- Lacter, Mark, "At Megaphone, It's Always Show Time", *San Francisco Chronicle*, Jun. 9, 1986.
- Table of Contents, *Megaphone Press Book*, pp. 1-3.
- "Miss Simpson, will you dial-a-joke for me please?", Cartoon.
- Lacter, Mark, "At Megaphone, It's Always Show Time", *San Francisco Chronicle*, Jun. 9, 1986, Year No. 123, (different perspective).
- Lacter, Mark, "Narrating Fantasy Messages—It's No Dream Job", *San Francisco Chronicle*, Jun. 9, 1986.
- "Megaphone Serves High-Tech Showbiz", *San Francisco Chronicle*, Jun. 9, 1986.
- "Megaphone Reaches Unique Market", *San Francisco Chronicle*, Jun. 9, 1986.
- Feuer, Jack, "Asher/Gould: Megaphone Dials-a-Shop", *Adweek*, May 12, 1986.

US 6,424,703 B1

Page 8

- Symanovich, Steve, "Novelty over for phone porn vendors", and continuation "Big firms breathing down necks of small phone porn outfits" *San Francisco Business Journal*, May 5, 1986.
- Wilke, John, "A 'Dream' Business That's Just A Phone Call Away", *Information Processing*.
- Ketcham, D.E., "Dial-a-You-Name-It", *San Francisco Chronicle*, 1986.
- Carter, Alan, "What? You didn't know Erica was engaged again?", *Daily News*, Mar. 12, 1986.
- "Firm plugs into sales with time, temp lines", *Crain's New York Business*, Mar. 3, 1986, vol. II, No. 9.
- Pitts, Gail, "Phone-in trivia games ring up profits", *The Denver Post*, Feb. 3, 1986.
- "Merge Towards Success" IIN and Megaphone, *The 976 Exchange*, Winter 1976, vol. 4.
- Nelson, David, "From dating to soap operas, 976 numbers come on line", *San Jose Business Journal Magazine*, Jan. 27, 1986.
- Greengard, Samuel, "Dial-A-Deluge", *Business*, Nov. 1985.
- "Numbers, Please", *Business*, Nov. 1985.
- "The 976 Telelease Co.", *Business Opportunities Journal*, Dec. 1985.
- "One-time refund for '976' charges", *San Francisco Examiner*, Nov. 7, 1985.
- Kent, Debra, "Interactive phone network stretches for calls", *Advertising Age*, Oct. 17, 1985.
- "Making Your Phone Talk To Computers", *U.S. News*, Sep. 23, 1985.
- Mulqueen, John, "Int'l Information Network Eyes Contact With British Telecom", *Communications Week*, Sep. ??.
- Moorhead, Derrol, "Humor romance: just a call away", *Rocky Mountain Collegian*, Sep. 19, 1985, vol. 94, Iss. 32.
- Keppel, Bruce, "Move Under Way to Curb Abuse of Popular Dial-It Service", *Los Angeles Times*, Sep. 1, 1985.
- "Dial-a-stock", *Forbes*, Aug. 1985.
- Sowa, Tom, "Games people play now include phone trivia", *Spokesman-Review*, Jul. 1985.
- Dougherty, P.H., "Advertising Telephone Is Growing As Medium", *The New York Times*, Jul. 17, 1985.
- Larson, Judy, "976 numbers entice adults—and kids", *Fremont Argus*, Jul. 8, 1985.
- Barbieri, Richard, "Prime Time for the Telephone", *Channels*, May/Jun. 1985, pp. 54–55.
- "Bank Provides Financial Fuel To Fast Track Company", *The Financial Center Bank*, First Quarter 1985, vol. II, No. 1.
- "Don't Phone Santa", *San Francisco Chronicle*, Letters to the Editor, Mar. 29, 1985.
- Carvalho, Deborah, "Will Hillary find happiness with Bob?", *Contra Costa Times*, Mar. 15, 1985.
- Murphy, Win, "Dial-a-romance", Mar. 13–19, 1985.
- ? , Martha, "Love, laughs, luck: Just a phone call away", *Burlington County Times*, Feb. 17, 1985.
- Robinett, Stephen, "Blood From A Rock", *Venture*, Jan. 1985, pp. 38–41, 44–45.
- Du Brow, Rick, "Lates hot lines for instant trivia pursuit", *Los Angeles Herald Examiner*, Dec. 6, 1984.
- "Keep up with your favorite soap operas", *Contra Costa Times*, Nov. 30, 1984.
- Hanna, Barbara, "Inside Radio/TV".
- Behr, Debra, "'Victory' makes and writes its own on-the-road news", and "Whose calling? Michael fans most likely . . .", *Los Angeles Times*, Nov. 29, 1984.
- "Newcomer Megaphone Has Magnanimous Goals", *The 976 Exchange*, Fall 1984, vol. 2.
- "Phone Santa", *Vecaville Reporter*, Nov. 10, 1984.
- "Dial 976 for Profits", *Time*, Sep. 3, 1984.
- Pendleton, Mike, "For A Fee Your Phone Can Inform", *Burrelle's*, Jul. 19, 1984.
- "Phone numbers to get details about soaps", *Burrelle's*, Jul. 18, 1984.
- Gansberg, A.L., "976 phone prefix as new entertainment fad", *The Hollywood Reporter*, Jun. 21, 1984.
- Carvalho, Deborah, "Another 'GH' actor discontented with the soap", *Contra Costa Times*, May 26, 1984, p. 4.
- "Keep up with your favorite soap operas", *San Francisco Examiner*.
- Du Brow, Rick, "Dial-a-soap' service offers daily TV summaries", *Los Angeles Herald Examiner*, Apr. 26, 1984.
- News briefs, Feb. 1966.
- Martin, J., et al., "The Computerized Society—An appraisal of the impact of computers on society over the next fifteen years", Chapter 10, pp. 211–226—(Chapter from a Book).
- New products, *Datamation*, Jul. 1966, vol. 12, No. 7, pp. 7/89—(Article).
- Meacham, L.A., et al., "Tone Ringing and Pushbutton Calling", *The Bell System Technical Journal*, 1958, pp. 339–360—(Book).
- Suppes, Patrick, "The Uses of Computers in Education", *Scientific American*, Sep. 1966, vol. 215, No. 3, pp.—(Article).
- Bruckert, E., et al., "Three-tiered software and VLSI aid development system to read text aloud", *Electronics*, Apr. 21, 1983, pp. 133–138—(Article).
- Hochman, David, "Implementing Automatic Number Identification", *Telecommunications*, Dec., 1978, vol. 12, No. 12—(Article).
- Martin, James, "Telecommunications and the Computer", 2nd Edition, Introduction, pp. 20–23, Chapter 5, pp. 94–95, Chapter 18—(Chapter from a Book).
- Martin, James, "Telematic Society", Chapter 6, pp. 45–48, Chapter 9, pp. 67–69, Chapter 20, pp. 181–188—(Chapters from a Book).
- Martin, James, "The Wired Society", pp. 53–55, 71–79, 99–100, 204–205, 229–231—(Chapters from a Book).
- Martin, James, "Future Developments in Tele-Communications", 2nd Edition, Box A, Chapter 1, p. 5, Chapter 7, pp. 95–111, Chapter 9, pp. 149–105, Chapter 12, pp. 207–209, Chapter 18, pp. 310–311, Chapter 19, pp. 314–317, 320, Chapter 20, pp. 330, Chapter 23, pp. 379–401—(Chapters from a Book).
- Ferrarini, E.M., "Informania", pp. 59–61, 176–177, 191, 213–214, 223, 245, 250, 257, 285, 286—(Book).
- Kimura, Y., et al., "Audio Response System", vol. 55, No. 10, pp. 49–54—(Article in Japanese).
- Takano, H., "Characteristics of Multipair Exchange Area Telephone Cable with Cellular Polyethylene Insulation by Gas Injection Blowing", p. 55—(Article in Japanese).
- Takahashi, T., et al., "SR-2000 Voice Processor and Its Application", *NEC Research and Development*, 1984, No. 73, pp. 98–105—(Paper).
- "Concept Diagram Voicemail International System".
- "Voicemail Instruction Manual", Televoice International, Jun. 1981, Index.
- Eckhouse, John, "Voice mail spells relief for phone frustration", *San Francisco Examiner*, Feb. 7, 1982—(Article).
- Meade, Jim, "Throw away those pink Call-back slips", *InterOffice*, Jan./Feb. 1984, vol. 3, No. 1—(Article).
- Welsh, Jack, "Everybody's Talking About Talking Bouquets", *Design for Profit*, Spring 1986, pp. 7–10—(Article).
- Mosco, Vincent, "Pushbutton Fantasies", Contents, Chapter 3 and 4, pp. 67–118 —(Chapters from a Book).
- Bretz, Rudy, "Media for Interactive Communication", Chapter 5, pp. 110–116, Chapter 7, pp. 143–153—(Chapters from a Book).

US 6,424,703 B1

Page 9

- Robinson, G., et al., "Touch-Tone" Teletext A Combined Teletext-Viewdata System, *IEEE Transactions on Consumer Electronics*, Jul. 1979, vol. CE-25, No. 3, pp. 298-303—(Article).
- Voice News, Mar. 1982.
- Voice News, Jun. 1982, William W. Creitz.
- Voice News, Oct. 1982, p. 5.
- Voice News, Nov./Dec. 1983.
- "Consultant Report 28?", *AIS American Bell Advanced Information Systems*, Apr. 1983, pp. 27, 118-119, 123-124—(Report).
- "T-1 Board Sets Deliver High Performance All Digital T-1 Solutions", NMS Natural MicroSystems—(Product Bulletin).
- "VBX Product Family Overview", NMS Natural MicroSystems, pp. 1-20—(Brochure).
- "Machine Operation Manual", May 12, 1978, Issue 1, pp. 1-3, 9-10—(Manual).
- Davey, J.P., "Dytel Western Region Sales Training Manual", 1985—(Manual).
- Gutcho, Lynette, "DECtalk—A Year Later", *Speech Technology*, Aug./Sep. 1985, pp. 98-102—(Article).
- Daniels, Richard, "Automating Customer Service", *Insurance Software Review*, Aug./Sep. 1989, pp. 60-62—(Article).
- Golbey, S.B., "Fingertip Flight Service", Oct. 1985—(Article).
- "ARO Goes Pushbutton", *Newsletter*, Nov. 1985, p. 9—(Article).
- "ROLM Centralized Attendant Service", ROLM Corporation, 1979.
- "AIS, Versatile Efficient Information Service", *Fujitsu Limited*, 1972, pp. 153-162—(Brochure).
- Smith, S.L., et al., "Alphabetic Data Entry Via the Touch-Tone Pad: A Comment", *Human Factors*, 1971 13(2), pp. 189-190—(Book).
- Holtzman, Henry, "Still an Infant Technology Voice Mail", *Modern Office Technology*, Jun. 1985, pp. 78-80, 82, 84, 90—(Article).
- Leander, Monica, "Voice Response—A Technology for Solving Management Problems", *Speech Technology*, Mar./Apr. 1986, pp. 50-52—(Article).
- Stolker, Bud, "CompuCorder speech storage and output device. (evaluation)", *Creative Computing*, Jul. 1983, pp. 1-7.
- Witten, I.H., et al., "The Telephone Enquiry Service: a man-machine system using synthetic speech", *Int'l. Man-Machine Studies*, 1983, Jul. 1977, 9, pp. 449-464—(Book).
- Gould, R.L., "Fidelity's Automated Voice Response System", *Telecommunications*, Jan. 1981, pp. 27-28—(Article).
- "Fidelity Automated Service Telephone", Fidelity Group, 4 pages—(Manual).
- "Data Set 407 Interface Specification", Manager—Data Systems & Operations, Jun. 1975, Issue 2, pp. 1-69 plus Table of Contents—(Manual).
- Fitzwilliam, J.W., et al., "Transaction Network, Telephones, and Terminals", *The Bell System Technical Journal*, Dec. 1978, vol. 57, No. 10, pp. 3325-3537—(Book).
- Inbound Outbound*, May 1988, complete issue.
- Koch, Helmut, "Concord Design Services, Inc. Corporate Description", Exacom.
- Federal Communications Commission, FDC Form 484, Registration, Registrant: Concord Design Services, Inc.
- Exacom Telecommunications Systems—Brochure.
- General Description Installation and Operation Manual for Direct Inward Dial (DID) Trunk Interface Unit, Exacom. Telecommunications Systems, Nov. 21, 1989, Issue 3—(Manual).
- General Description Installation and Operation Manual for Answering Service Monitor System, Concord Design Services, Inc., Dec. 19, 1986, Issue 1—Manual.
- "Dialogic Voice Solutions", Dialogic Corporation, pp. 1-72.
- "Why Is T-1 Important And How Can It Be Used", Dialogic Corporation, Application Note, pp. 1-6.
- "Use of Dialogic T-1 For Telemarketing Applications", Dialogic Corporation, Application Note, pp. 1-6.
- "Use of Dialogic T-1 In Operator Service Applications", Dialogic Corporation, Application Note, pp. 1-6.
- "Use of Dialogic T-1 In Telephone Company Networks", Dialogic Corporation, Application Note, pp. 1-10.
- "Use of Dialogic T-1 Equipment in CPE Gateways", Dialogic Corporation, Application Note, pp. 1-4.
- "Integrating Analog Devices into Dialogic-Based T-1 Voice Processing Systems", Dialogic Corporation, Application Note, pp. 1-16.
- "Use of Dialogic Components in Automatic Number Identification (ANI) Systems", Dialogic Corporation, Application Note, pp. 1-16.
- "Dialogic Unit Pricing", pp. 1-6.
- "Voice '92 Spring Conference & Exposition", 1992, pp. 1-24—(Brochure).
- "Telecom Developers '92", Jan. 1991—(Advertisement).
- Newton, Harry, "The Sheer Thrill Of It All", *Teleconnect*, May 1991.
- "AFIPS Conference Proceedings", 1987 National Computer Conference, Jun. 15-18, 1987, Chicago, Illinois "Dynamic Network Allocation".
- "Calling your computer is as easy as calling your broker, says AT&T", *Record*, Nov. 1985.
- Singleton, L.A., "Telecommunications in the Information Age", Chapter 12, pp. 115-125—(Chapter from a Book).
- Weitzen, H.S., "Telephone Magic", pp. 28-31, 38-39, 54-55, 62-67, 70-79, 82-85, 88-91, 106-115, 118-121, 126-127, 134-137, 176-177, Index—Chapters from a Book).
- Weitzen, H.S., et al., "Infopreneurs", pp. 18-19, 138-145, 206-209, Index—(Chapters from a Book).
- Sullivan, Kathleen, "Paper firm relies on voice-based inventory system", IDG Communications, Inc., Sep. 10, 1984—(Script).
- "VTK Training Section" and "Disk Initialization for VTK-30/60", Voicetek Corporation—(Manual).
- "VoiceStor Systems Integration Guide", Voicetek Corporation, May 2, 1983—(manual).
- "VTK 60 Voice Computer—Technical Description", Voicetek Corporation, Oct. 1986—(Manual).
- "Voicetek VS-50 Telephone Interface System", Apr. 25, 1984, System Integration Guide—(Manual).
- "VTK Voice System—Programmers Guide", Voicetek—(Manual).
- "Disk Initialization Procedures for VTK-30/60", Voicetek Corporation—(Manual).
- "VTK81 Voice Computer—Technical Description", Voicetek Corporation, Oct. 1986—(Manual).
- "VTK Voice System—VTK/CE Guide", Voicetek, Jul. 6, 1987—(Manual).
- Newton, Harry, "Newton's Telecom dictionary", Telecom Library Inc., 1991—(Advertisement).
- "1987 Buyers Guide", *Teleconnect*, Jul. 1987, pp. 194, 197-210—(Brochure).
- Syntellect Inc.—Advertisements.
- Various copies of Business cards.
- Guncheon, M.C., "The Incredible Dial-A-Message Directory", *Contemporary Books, Inc.*, 1985—(Directory).
- "Voice Box Maintenance Manual", Periphonics, 1986—(Manual).

US 6,424,703 B1

Page 10

- "Voicelac Maintenance Manual", Periphonics, 1984—(Manual).
- Dyer, Ellen, "Wichita Firm Sells 25% Share", Dec. 14, 1987, and "Spectrum Carving Role In Volatile Business", Jul. 7, 1986, Search Results.
- "Don't Miss The Unique Gift Idea Of The Year", Yam Educational Software, 1987—(Advertisement).
- "Welcome to the future of advertising.", Teleline, Inc., 1990—(Presentation).
- "Greeting Card Project", Teleline, Inc., Nov. 7, 1988—(Flow Chart).
- Sharkey, Betsy, "Dialing for Dollars and Data", *Adweek*, Nov. 16, 1987, pp. 6–8—(Article).
- Gay, Verne, "CBS may tie rates to buying p?", 1988—(Article).
- Flanagan, J.L., et al., "Synthetic Voices For Computers", *IEEE International Conference on Communications*, 1970, pp. 45–9–45–10—(Conference Record).
- Rabiner, L.R., et al., "Computer Voice Response Using Low Bit Rate Synthetic Speech", *Digest IEEE 71 International Convention*, Mar. 22–25, 1971, p. 1–2, Fig. 1–2—(Paper).
- "DT1000 DigiTalker Speech Synthesis Evaluation Board", National Semiconductor Corp., Oct. 1980—(Manual).
- "Data Set 407C Interface Specifications Nov. 1977", *Bell System Technical Reference*, Nov. 1977, pp. 1–50—(Paper).
- Broomfield, R.A., et al., "Making a data terminal out of the Touch-Tone telephone", *Electronics*, Jul. 3, 1980, pp. 124–129—(Paper).
- Godfrey, D., et al., "The Telidon Book—Designing and Using Videotex Systems", pp. 1–103—(Book).
- "Industry Marketing Bulletin", Honeywell EDP Wellesley Hills, Aug. 9, 1967.
- "Honeywell Communications Configuration Charts And Aids In Designing", *Data Communications*, pp. 3–1–3–7 and A.
- "Burroughs Audio Response System", Reference Information for Sales Representatives, pp. 1–6
- "New Product Announcement", Burroughs Corporation, Feb. 5, 1968.
- "Stand-Alone Lockbox Application Voice Response (Slave) Communication System Functional Specification", Cognitronics Corporation, Feb. 19, 1982, p. 21.
- "Unlock lockbox reporting. with Cognitronics Voice Response Communications System/Banking", Speech-maker a division of Cognitronics Corporation.
- "Voice Response for Banking", Cognitronics Corporation (Brochure).
- "voice response for application brief", Speech-maker—(Brochure).
- "Instant credit authorization is an easy touch when any telephone is a voice response computer terminal", Speech-maker a division of Cognitronics Corporation—(Article).
- Slutske, Gary, "Relationship marketing", *Forbes*, Apr. 3, 1989—(Article).
- Finnigan, P.F., "To Our Shareholders", Jun. 1985, Apr. 7, 1986, Apr. 10, 1987—(Letters).
- "International Programs" (Voicemail).
- Finnigan, P.F., "Our guest", Radio-Schweiz AG Telekommunikation und Flugisicherung, Jan. 1983, pp. 12–14—(Bulletin).
- Finnigan, P.F., "Voice mail", 1983 National Computer Conference, May 16–19, 1983, Anaheim, CA, pp. 375–377 and Abstract.
- "Conversations in Your Mailbox", *Software News*, Jan. 1985—(Article).
- Fredric, Paul, "Voicemail Int'l, Radio Page America To Offer A 'Pocket News Network'", *Communications Week*, Jul. 8, 1985—(Article).
- "Voice-Messaging System: Use It While You're In, Not Out", *Information Week*—(Article).
- "Corporate Performance—Companies To Watch", *Fortune*, Sep. 30, 1985—(Article).
- "Dream Weaver", Jon Lindy, Aug. 1986, pp. 32–35, 37—(Article).
- "Turn any telephone into a complete electronic message service", Voicemail—(Brochure).
- Pages from Company Brochure, Televoice International, Inc.
- "VMI Big Talker", Voicemail International, Inc.—(Newsletter).
- "Newsline", Voicemail International, Inc., Oct. 1984 and Nov. 1984.
- "Voiceletter No. 1", Voicemail International, Inc., Dec. 1985.
- "A New, More Productive Way to Use the Telephone", Voicemail International, Inc.—(Brochure).
- "While You Were Out . . ."—(Brochure).
- "?For People Who Can't Afford To Miss Messages", Voicemail International, Inc.—(Brochure).
- "Voicemail The electronic news service saves time, money, and nerves", Radio-Suisse Ltd., (Voicemail Agent for Europe)—(Brochure).
- "Are You Being Robbed of Your Time . . .?", Voicemail International, Inc.—(Brochure).
- "Voicemail Instruction Manual B—85", Televoice International, Nov. 1980 —(Manual).
- "Local Telephone Numbers" (for Voicemail) and "Televoice Is As Easy As 1,2,3!", Televoice International—(Manual).
- "Voicemail Instruction Manual C—25", Televoice International, Jun. 1981 —(Manual).
- "Telephone Numbers" (for Voicemail) and "How To Use Voicemail", Televoice International—(Manual).
- "Message Receiving/Sending" (and others), Voicemail International, Inc. —(Manual).
- "You Can Use Voicemail To Send And Receive Messages At Anytime Anywhere In The World", Voicemail International, Inc., 1981—(Brochure).
- "Advanced User Guide", Voicemail International, Inc.—(Manual).
- "Voicemail's Basic User's Guide", Voicemail International, Inc.—(Manual).
- "Welcome To Dowphone", Dowphone, Jan. 1987—(Manual).
- "Telephone 1–800 Check–PDR", Officers of Medical Economics Company, Inc., 1986—(Circulation/Brochure).
- "Turn your telephone into an efficient electronic "mailbox""", Western Union, Jan. 1984—(Brochure).
- "Western Union Voice Message Service User's Guide", Western Union, Jul. 1984—(Brochure).
- "PSA's 24 hour reservation system", PSA, Sep. 1986—(Brochure).
- "To Better Serve Your Business, We're On Call Days, Nights, and Weekends.", Maryland Business Assistance Center—(Brochure).
- "Voice Response: Breaks Trough Call Blockage.", *Business Week*, Aug. 26, 1985—(Advertisement for Preception Technology Corporation).
- "Tools for heavy hitters", *Forbes*, May 6, 1985.
- "The Fidelity Automated Service Telephone", Fidelity Group—(Manual/Brochure).
- "Stockquote Hotline", Norwest Brokerage Services—(Brochure).
- "All You Need To Get The Stock Quotes And News You Want." Dowphone, 1984—(Advertisement).
- "The Most Respected Name In Telemarketing", West Interactive Corporation —(2 Brochures).

US 6,424,703 B1

Page 11

- Borison, V.S., "Transaction—telephone gets the fact at the point of sale", *Bell Laboratories Record*, Oct. 1975, pp. 377-383—(Article).
- Demeautis, M., et al., "The TV 200 A Transactional Telephone", *Communicaion & Transmission n 5*, 1985, pp. 71-82—(Article).
- Eriksson, G., et al., "Voice and Data Workstations and Services in the ISDN", *Ericsson Review*, May 1984, pp. 14-19—(Article).
- Schrage, Michael, "A Game Von Meister in Pursuit of Profits", *Washington Post*, Sep. 23, 1985—(Article).
- Svigals, J., "Low Cost Point-Of-Sale Terminal", *IBM Technical Disclosure Bulletin*, Sep. 1982, vol. 25, No. 4, p. 1835.
- Turbat, A., "Telepayment And Electronic Money The Smart Card", *Communicaion & Transmission n 5*, 1982, pp. 11-20—(Article).
- "Voice Mail", *Sound & Communications*, Apr. 1983, vol. 28, No. 12, pp. 84-85—(Article).
- Aso, Satoshi, "Trends and Applications of Voice Output Devices", *2209 J.E.E. Journal of Electronic Engineering*, Feb. 1982, vol. 19, No. 182, pp. 102-107—(Article).
- Kroemer, F., "TeleBox", *Unterrichtsblätter*, year 38/1985, No. 4, pp. 131-141 (Article)—no translation.
- Kroemer, F., "TeleBox", *Unterrichtsblätter*, year 41/1988, No. 2, pp. 67-83 (Article)—no translation.
- C.R. Newson, "Merlin Voice Mail VM600," *British Telecommunications Engineering*, vol. 4, Apr. 1985, pp. 32-35.
- A.S. Yatagai, "Telephonic Voice Synthesis Systems", *Telecommunications*, Aug. 1985, pp. 56h-I, 68.
- A.J. Waite, "Getting Personal With New Technologies For Telemarketers," *DM News*, Feb. 15, 1987 at 50.
- "Shopping via a network is no longer just talk," *Data Communications*, Aug. 1981 at 43.
- "Growth-Oriented Systems," *Restaurant Technology*, *Nation's Restaurant News Newspaper*, Jul. 1, 1985 at 51.
- "Let your fingers do the tapping and the computer the talking," *Modern Office Tech.*, May 1984 at 80.
- "American Software unveils systems for IBM mainframes," *Computerworld*, Mar. 26, 1984 at 59.
- "Business Units Get Order Entry," *Computerworld*, Jul. 12, 1982 at 36.
- * cited by examiner
- Primary Examiner—Stella Woo*
(74) Attorney, Agent, or Firm—Ronald A. Katz;
Technology Licensing LP

(57)

ABSTRACT

A telephonic-interface lottery system D interfaces with a multiplicity of individual terminals T1-Tn of a telephone network facility C to enable lottery players to call and play for at least one additional chance to possibly win by dialing a pay-to-dial telephone number indicated on a "scratch-off" or online game lottery ticket for use in the system. At the terminals, callers are prompted by voice-generated instructions to provide digital data, such as their telephone number, age, social security number, and/or drivers license number. In addition, the sequence number of the caller as well as the date and time of the call is recorded for positive association with a caller and is stored for processing. The caller's identification data is confirmed using various techniques and callers may be ranked and accounted for on the basis of entitlement-and sequence. In accordance with one format, an instant winner is selected online by utilizing techniques such as determining a random winning sequence number or a winning lottery number generated by a number generator. As an adjunct or alternative, the identification data is processed at a later time to determine a grand prize drawing winner by using various processing techniques for determining winners.

125 Claims, 6 Drawing Sheets

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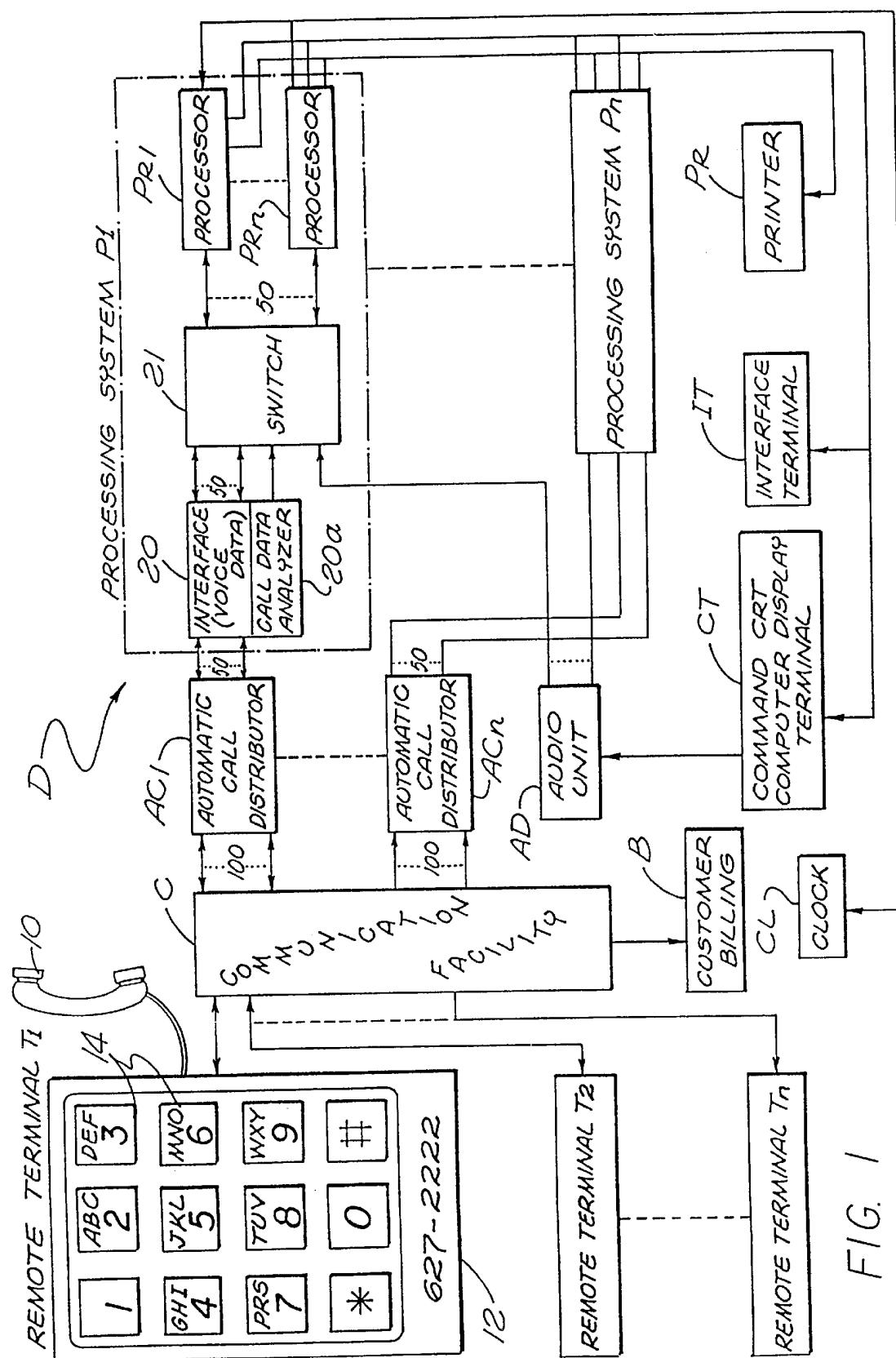


FIG. 1

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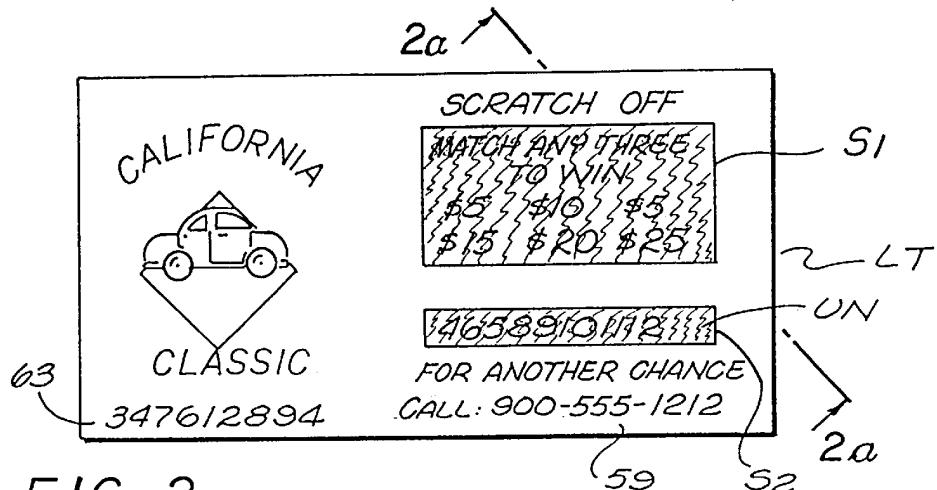


FIG. 2

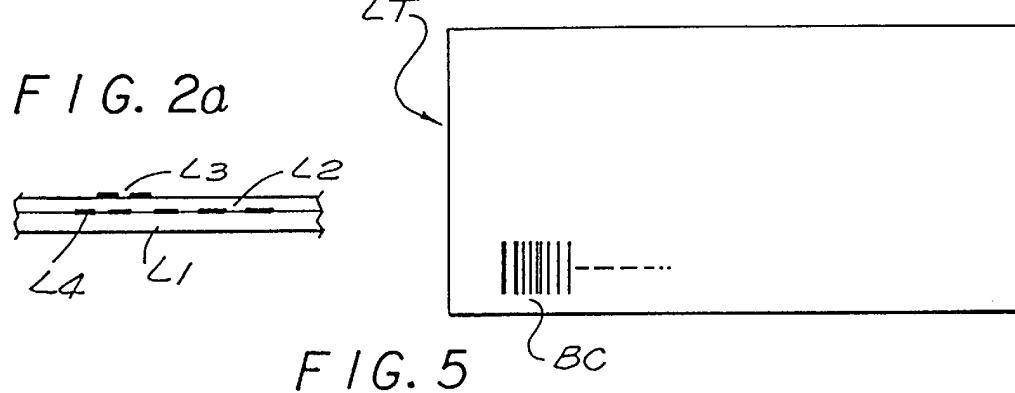


FIG. 2a

FIG. 5

C1 53	58	62	64	66
CALLERS TELEPHONE NUMBER	DATA: AGE, DRIVER'S LICENSE #, CREDIT CARD # OR SOCIAL SECURITY #	DATE AND TIME	SEQUENCE NUMBER	LOTTERY/UN NUMBER
627-2222	21,0308050	AUG.18, 1:30am	4951	465789101112
.....			PRIZE AMOUNT TYPE	ASSIGNED DESIGNATION
.....			4951684	6173
.....			67	69
.....			ACKNOWLEDGE DIGITS	

FIG. 7

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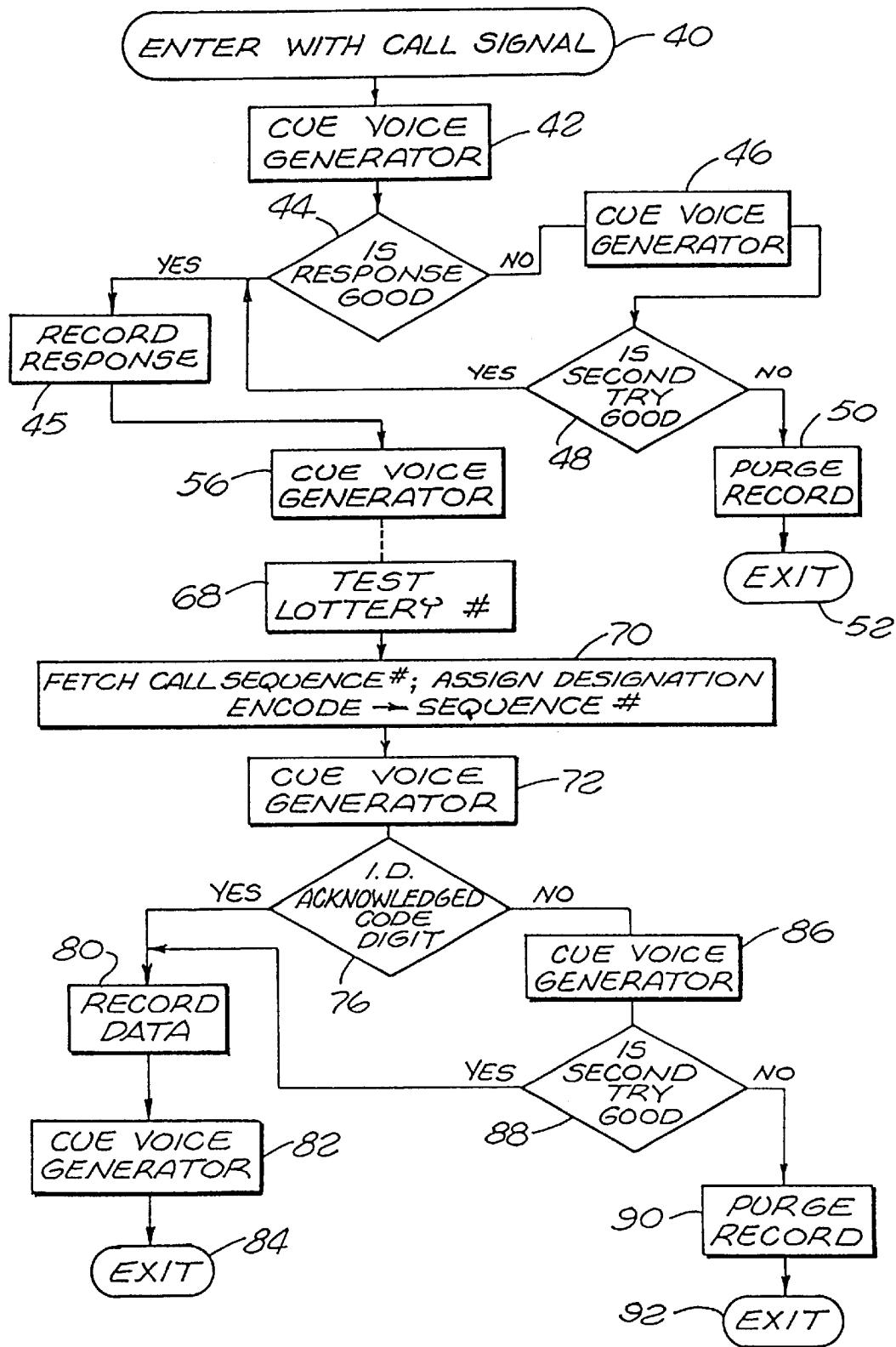


FIG. 3

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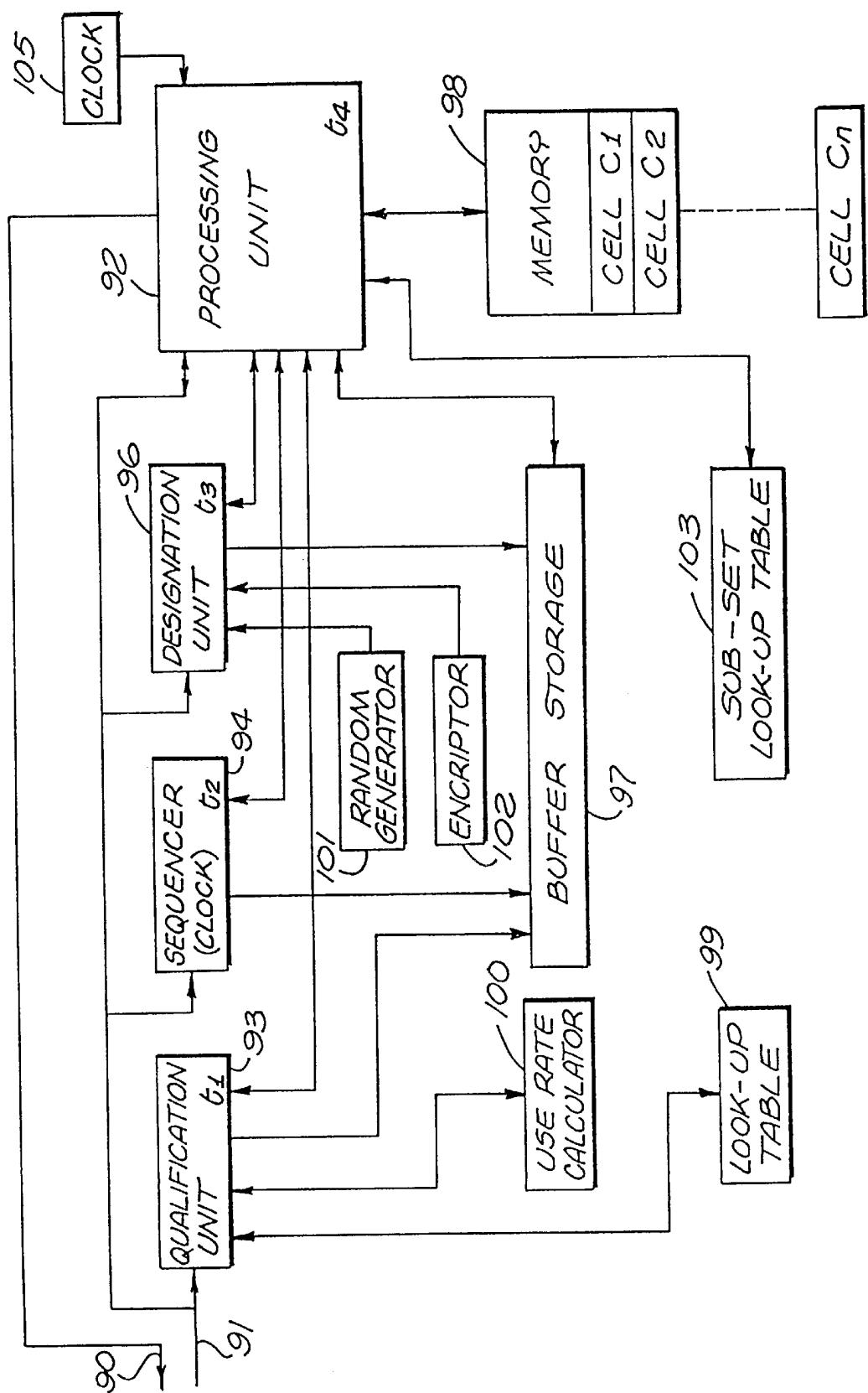


FIG. 4

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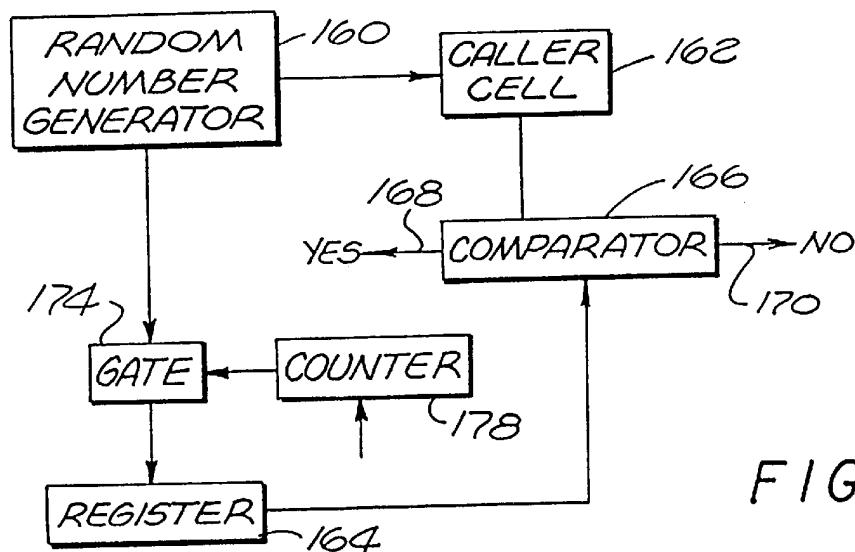


FIG. 6

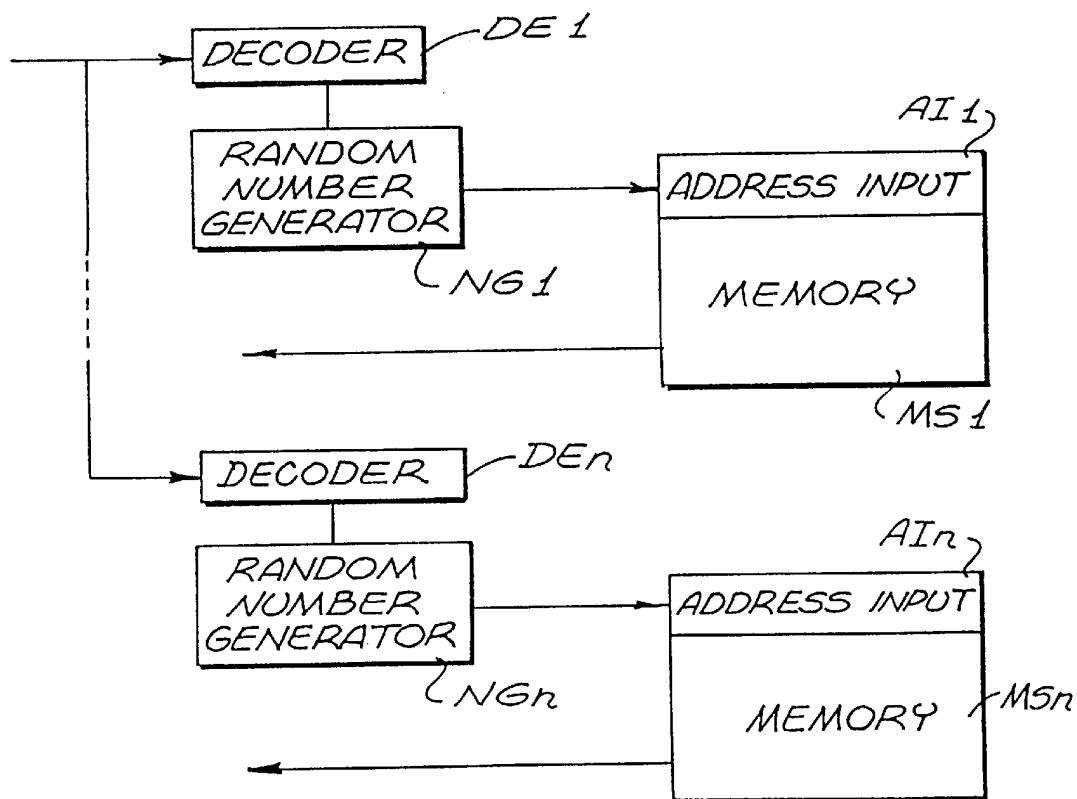


FIG. 8

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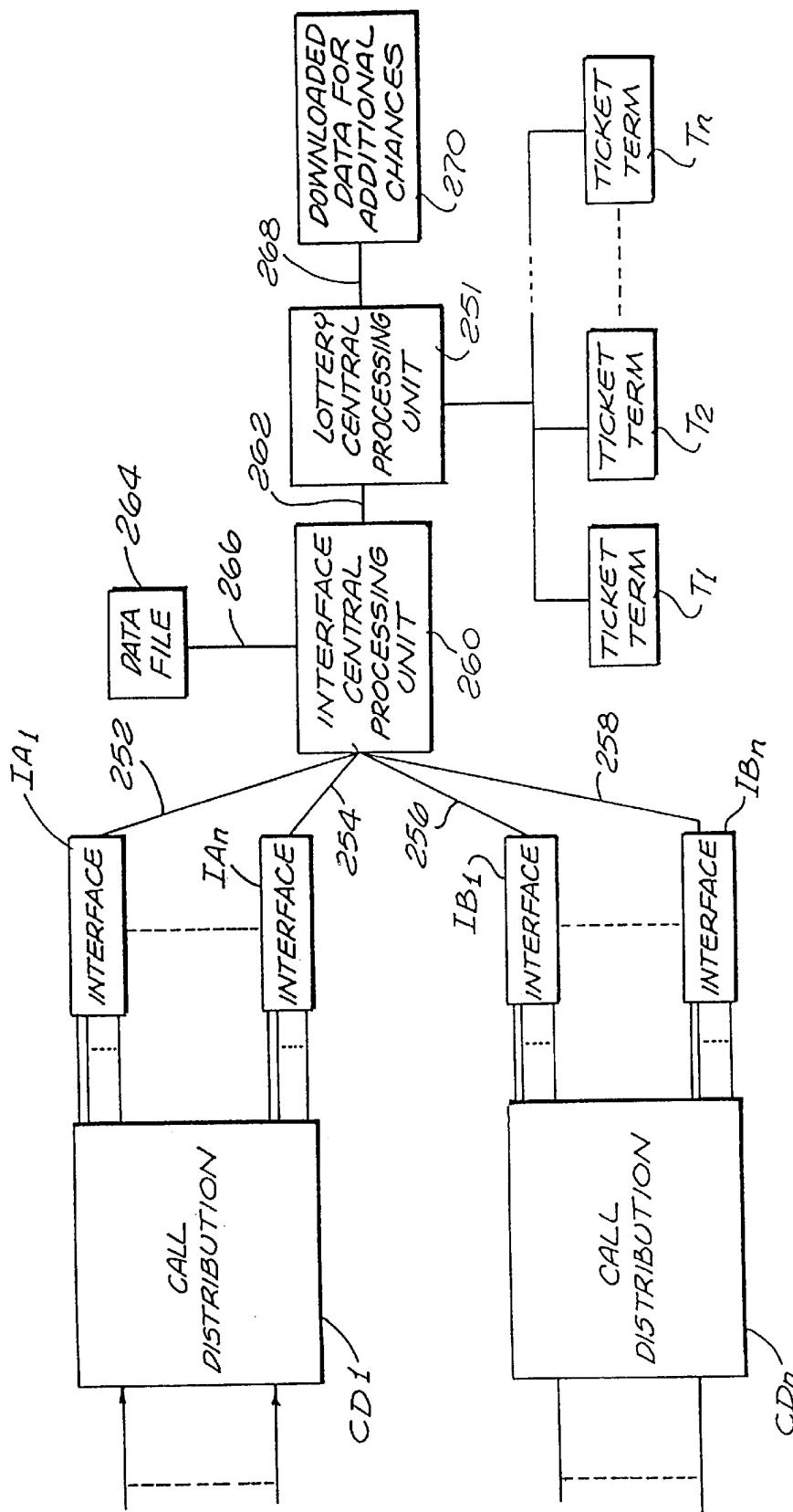


FIG. 9

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**TELEPHONIC-INTERFACE LOTTERY
SYSTEM**

This is a continuation of application Ser. No. 08/306,650 filed on Sep. 14, 1994, and entitled "Telephonic-Interface Lottery System," which is a continuation of application Ser. No. 07/756,956 filed on Sep. 9, 1991, and entitled "Telephonic-Interface Lottery System," now U.S. Pat. No. 5,365,575, which is a continuation-in-part of application Ser. No. 07/555,111 filed on Jul. 18, 1990, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 5,048,075, which was a continuation of application Ser. No. 07/342,506 filed on Apr. 24, 1989, and entitled "Telephonic-Interface Statistical Analysis System," now abandoned, which was a continuation of application Ser. No. 07/194,258 filed on May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which was a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned.

Also, application Ser. No. 08/306,650 is a continuation-in-part of application Ser. No. 08/306,751 filed on Sep. 14, 1994, and entitled "Multiple Format Telephonic Interface Control System," which is a continuation of application Ser. No. 08/047,241 filed on Apr. 13, 1993, and entitled "Multiple Format Telephonic Interface Control System," now U.S. Pat. No. 5,351,285, which is a continuation of application Ser. No. 07/509,691 filed on Apr. 16, 1990, and entitled "Multiple Format Telephonic Interface Control System," now abandoned, and a continuation-in-part of application Ser. No. 07/640,337 filed on Jan. 11, 1991, and entitled "Telephonic-Interface Statistical Analysis System," which is a continuation of application Ser. No. 07/335,923 filed on Apr. 10, 1989, and entitled "Telephonic-Interface Statistical Analysis System," which is a continuation of application Ser. No. 07/194,258 filed on May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which is a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which is a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned, said application Ser. No. 07/509,691, is a continuation-in-part of application Ser. No. 07/260,104 filed on Oct. 20, 1988, and entitled "Telephonic Interface Control System," now U.S. Pat. No. 4,930,150, which is a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which is a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned.

Also, application Ser. No. 08/306,650 is directly a continuation-in-part of application Ser. No. 07/335,923 filed on Apr. 10, 1989, and entitled "Telephonic-Interface Statistical Analysis System," which is a continuation of application Ser. No. 07/194,258 filed on May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which is a continuation-in-part of

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application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which is a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned. The benefit of the earlier filing dates in the United States is claimed under 35 U.S.C. § 120.

**BACKGROUND AND SUMMARY OF THE
INVENTION**

Various forms of publicly accessible communication systems for providing access to a central station have been proposed, some involving telecommunications. However, sometimes a need for ancillary functions arise in that regard, e.g. it may be desirable to positively identify a large group of persons, statistically analyze data from the group so as to accurately identify certain persons in the group and select a subset, or sub subsets of at least one person. In that regard, a need exists for an improved, effective, economical, and expedient system of telecommunication incorporating means for performing qualification, identification, analysis and selection of individual persons.

It has been proposed to interface persons at telephone calling stations directly with a computer facility. In accordance with such arrangements, recorded voice messages prompt callers to provide data by actuating the alphanumeric buttons that are conventionally employed for dialing from one telephone station to another. In one prior arrangement, a caller may actuate dialing buttons to selectively attain a communication channel or to address specific information in a computer. In another arrangement, dialing buttons may be actuated to specify an individual billing designation as for requested services. Generally, such systems are believed to have been somewhat limited in scope, often involving difficulties that are frustrating or confusing to a caller. Nevertheless, such techniques have been widely used to enhance and broaden communication.

The public lottery has become widely accepted as a basis for supporting government activities while providing aspects of entertainment and hope. Typically, conventional public lotteries have been facilitated by computers and data processing systems utilizing various formats. One conventional type of lottery incorporates the use of "scratch-off" lottery tickets that are sold by retailers. Under this system, winning tickets are returned to lottery retailers who redeem the tickets for the prize amounts, based on a physical approval of the lottery ticket.

In general, the present invention comprises a telephonic-interface lottery system and related process to further stimulate interest in the lottery by providing at least one additional chance to possibly win some prize (whether or not the scratch-off lottery ticket is a winner) by calling a pay-to-call number indicated on the scratch-off lottery ticket. The telephonic-interface lottery system can also be utilized with online tickets in which case the online terminal printer can print at least one unique identification number (either the existing printed ticket or lotto number or a new special number which may be interrelated to the existing ticket number) for subsequent telephone use. In one embodiment, scratch-off lottery tickets for use in the telephonic-interface lottery system include primary indicia defining a lottery format to evidence a winning lottery combination and at least one unique identification number used to pursue the additional chances. The lottery format and at least a portion of the identification number are concealed. The telephone

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number facilitating a play of the additional chance is a pay-to-call-number, such as preferably a 900 phone number.

The telephonic-interface lottery system utilizes both analog (voice) and digital telephonic communication in a variety of different interface formats or programs, to record data relating to each caller, in particular data formulated by the lottery system such as the sequence number of the call including the date and time at which the call occurred, data provided by the caller such as the area code and telephone number followed by the unique identification number or additional chance number from the lottery ticket. The system is configured to eliminate duplicate entries and verify the unique identification number. Instant winners can be selected while the lottery player is on the telephone by a designated winning sequence number or by a random number generator. In addition, winners can also be selected at a later designated time by a designated winning sequence number or by the random number generator.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, which constitute a part of this specification, exemplary embodiments exhibiting various objectives and features hereof are set forth, specifically:

FIG. 1 is a block diagram of a telephonic-interface lottery system constructed in accordance with the present invention;

FIG. 2 is a top plan view of a scratch-off lottery ticket for use in the system of FIG. 1;

FIG. 2a is a cross sectional view taken along line 2a-2a in FIG. 2;

FIG. 3 is a flow diagram of one operating format of the system of FIG. 1;

FIG. 4 is a block diagram of a form of processor or function unit as may be employed in the system of FIG. 1;

FIG. 5 is a bottom plan view of the scratch-off lottery ticket shown in FIG. 2;

FIG. 6 is a block diagram of elements in an operating function unit of FIG. 4;

FIG. 7 is a fragmentary diagrammatic representation of a storage cell format as may be developed in the system of FIG. 4; and

FIG. 8 is a block diagram of elements in an operating function unit of FIG. 4.

FIG. 9 is a block diagram of the connections between an interface CPU, a remote lottery CPU and remote stations.

DESCRIPTION OF THE ILLUSTRATIVE EMBODIMENTS

As required, detailed illustrative embodiments of the present invention are disclosed herein. However, physical communication systems, data formats, and operating structures in accordance with the present invention may be embodied in a wide variety of forms, some of which may be quite different from those of the disclosed embodiments. Consequently, the specific structural and functional details disclosed herein are merely representative; yet in that regard, they are deemed to afford the best embodiments for purposes of disclosure and to provide a basis for the claims herein which define the scope of the present invention.

Referring initially to FIG. 1, a series of remote telephone-instrument terminals T1 through Tn are represented (left). The terminals are generally similar, and accordingly, only the terminal T1 is illustrated in detail.

In the disclosed embodiment, the remote terminals T1 through Tn represent the multitude of conventional tele-

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phone terminals that are coupled to a communication facility C which may take the form of a comprehensive public telephone system for interconnecting any associated terminals T1-Tn. In accordance with the present system, the terminals T1-Tn operate through the communication facility C to be coupled with a central station D, an embodiment of which is illustrated in some detail.

Generally in accordance with the present development, individual callers use the individual telephone stations T1 through Tn to interface the station D through the communication facility C. Callers may be screened or qualified. Also in accordance herewith, the data of individual callers including digital data provided by callers may be collected, correlated and tested in the station D for processing in accordance with various programs and external data. As a consequence, various objectives are accomplished. For example, a select subset of the callers may be isolated and specifically identified, or related data may be processed, or transactions may be actuated. The possibilities for application of the system are substantial and varied as will be apparent from the exemplary structure and functions as described in detail below.

In one operating process format, legal lotteries are enabled that are interesting, effective and very economical on an individual participant basis. The telephonic-interface lottery system of the present invention further stimulates interest in the lottery by providing at least one additional chance to possibly win a prize in addition to a winning lottery format provided on a scratch-off lottery ticket or an online ticket. The additional chance is facilitated by calling a pay-to-call number indicated on the scratch-off lottery ticket. Some formats may use toll free 800 numbers as well.

The callers may be variously qualified on the basis of entitlement and may be identified for subsequent verification. The callers may be prompted, either through the interface or externally, to provide appropriate data, such as their age and the additional chance number which may be one or more unique identification numbers.

Considering the system of FIG. 1 in somewhat greater detail, it is to be understood that the communication facility C has multiplexing capability for individually coupling the terminals T1-Tn to the central station D on request. In the illustrative embodiment of the system, the communication facility C comprises a public telephone network and the individual terminals T1-Tn take the various forms of existing traditional or conventional telephone instruments.

The exemplary telephone terminal T1 is represented in some detail to include a hand piece 10 (microphone and earphone) and a panel 12 provided with a rectangular array of push buttons 14 in the conventional configuration. Of course, the hand piece 10 accommodates analog signals while the panel 12 is a digital apparatus. Generally in accordance herewith, the hand piece 10 serves to manifest analog signals vocally to the caller.

In accordance with conventional telephone practice, alphabetic and numeric designations are provided on the buttons 14. For example, several of the buttons 14 carry three letters along with a decimal digit. Specifically, the button designated with the numeral "2" also carries the letters "A", "B" and "C". In that manner, the buttons 14 encompass the numerals "0-9", two symbols, and the alphabet except for the letters "Q" and "Z". Consequently, the buttons 14 accommodate the entry of decimal data, and to some extent alphabetic data.

The buttons 14 designated with symbols "*" and "#", along with the numeral "0", can be used by predetermined

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assignment to represent the letters "Q" and "Z" or any of a variety of other data or command components. Generally, in accordance herewith, the buttons 14 are employed to formulate digital data at the central station D in various formats determined by the instant specific use and operating format of the system.

Considering the central station D in somewhat greater detail, the communication facility C is coupled to interface a series of processing systems P1 through Pn (FIG. 1, right). Specifically, the communication facility C is connected to the processing systems P1-Pn through an associated series of automatic call distributors AC1 through ACn. Each of the automatic call distributors AC1-ACn accommodates one hundred lines from the communication facility C and accordingly, may accommodate and queue up to 100 calls.

Each of the automatic call distributors AC1-ACn may take various forms as well known in the prior art, functioning to queue incoming calls for connection to a lesser number of lines. Also, in various systems audio response units (ARU's) may be used as for preliminary processing in accordance with the operations as described below.

In the disclosed embodiment, from each of the call distributors AC1-ACn, fifty lines are connected respectively to the individual data processing systems P1-Pn through an interface 20 and a switch 21. Thus, in the disclosed embodiment, each of the automatic call distributors AC1-ACn can accommodate one hundred lines, fifty of which may be active in association with one of the processing systems P.

The processing systems P1-Pn are similar, therefore, only the processing system P1 is shown in any detail. Collectively, the processing systems P1-Pn are interconnected with a command computer terminal CT, at least one interface terminal IT, at least one printer PR and an audio unit AD. The command terminal CT is separately coupled to the audio unit AD.

As represented, the processing systems P1 through Pn each contain a number of individual function units or processors PR1 through PRn. Although various other configurations and arrangements may be employed, the explanation is facilitated by including a plurality of individual function units as treated in detail below.

Considering the processing system P1, fifty lines from the automatic call distributor AC1 are connected to the interface 20, an exemplary form of which may be a commercially available Centrum 9000 unit. The interface 20 incorporates modems, tone decoders, switching mechanisms, DNIS and ANI capability (call data analyzer 20a) along with voice interface capability. Note that the interface may actually perform analysis on data. However, to preserve the disclosed embodiment manageable, major analysis is explained with reference to processors.

Generally, DNIS capability is a function of the communication facility C (composite telephone system) to provide called terminal digital data indicating the called number. ANI capability is a similar function whereby the digital data indicates the calling number with calling terminal digital signals. Both capabilities are available for use with equipment as the interface 20 and to provide control through the call data analyzer 20a.

Accommodating up to fifty independent calls on separate communication paths to the central station D, the interface 20 is capable of providing analog (voice) signals to prompt each caller. Also accommodated are digital signals including the DNIS and ANI signals. The system contemplates the possibility of utilizing sequences of lines in rotary as well as

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blocking sequences of lines, the numbers for which command a particular program or operation format of a function unit as disclosed in detail below.

The interface 20 provides the connection of the fifty lines to a switch 21 which is in turn coupled to fifty function units, or processors PR1-PRn. As indicated above, multiple function units, or processors, are described in the disclosed embodiment to facilitate the explanation. Of course, non-parallel techniques and multiplexed operations might well be employed as alternatives. For a similar reason, as disclosed herein, each of the processors PR1-PRn includes memory cells for each of the callers' individual data. Development and compilation of data in such cells according to various operating formats is described below. In the disclosed embodiment, the processors PR1-PRn are connected collectively to the command computer terminal CT (incorporating a CRT display), the interface terminal IT, and the printer PR. Note that the CRT display serves to visually display data regarding select subsets as explained in detail below.

Exemplary detailed structures for the processors PR1-PRn are described below; however, in general, the units may comprise a microcomputer, for example, programmed as suggested above and as disclosed in detail below to accomplish specific operating formats. As an integral part of such formats, a caller may be qualified as belonging to an entitled set of persons, such as persons holding a proper lottery ticket and being over a certain age. Also, callers may be designated both with respect to their significance and their identification. For example, callers may have different significance in a format, depending on the time or sequence of their call. Also, the designation of a caller may be exceedingly important in relation to the caller eventually being isolated as part of a subset or sub subsets, the members of whom must be accurately verified.

As described below, in a lottery format the designations may involve multiple elements which may include: random number assignments, encryption techniques, utilization of calling numbers, identification data, sequence of call and so on to facilitate reliable verification. Note that the communication facility C has a customer billing, structure B that is interfaced by the system.

On the qualification and designation of callers, the system enters a data receiving phase during which digital data (formatted at one of the telephone terminals T1-Tn by the caller) is processed by one of the processors PR1-PRn. In general, the processing evolves a subset (at least one caller) and also possibly a sub subset, the members of which may be verified and confirmed.

Either during the data accumulation phase, or after the processing phase to isolate a subset, a distinct operation may involve actuating the interface terminal T1 for direct communication between the caller and an operator at the terminal T1. Another distinct operation may involve actuation of the printer PR to provide documents in relation to the operating format, as for providing award certificates as for verifying members of an isolated subset. Also, charge slips may be generated containing at least part of the data of a particular transaction.

A general sequence of operations for a format is represented to be initiated in FIG. 3 by the "enter" block 40 which is accordingly followed by a "cue voice generator" command block 42. If the ANI (automatic number identification) equipment is not employed, the voice generator in the interface 20 formulates speech, a representative form of which might be: "Thank you for participating in the lottery.

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Please give us your telephone number by actuating the call buttons on your telephone instrument."

Acting on the instructions, the caller would push the buttons **14** in sequence to indicate his telephone number, e.g. "(213) 627-2222". Alternatively, the interface **20** can accept the calling number ((213) 627-2222) according to its provision by standard ANI equipment of the communication facility C.

The resulting data signals are communicated from the interface unit **20** (FIG. 1) to the processor PR1 for testing the telephone number as valid or entitled. Essentially, the format of a proper number prompts production of a valid or "good" signal. The test is indicated by the block **44** (FIG. 3). If the response is not valid or entitled, for example contains an inappropriate number of digits or has been used to a point of excess, the operation of block **46** is initiated again cuing the voice generator **30** (FIG. 1). The voice generator accordingly instructs the caller, e.g.: "You have not entered a proper telephone number. Please reenter your telephone number by pressing the appropriate call buttons." The caller is then allotted a predetermined period of time to make a proper entry with the consequence that the system moves to a test operation as indicated by the block **48** (FIG. 3). Specifically, block **48** poses the query: "Is the second try good?"

If the caller is again unsuccessful, the system purges the record as indicated by the block **50** and the call is terminated as indicated by the block **52**. In an alternative mode, the processor PR1 may abort the interface and couple the interface terminal IT for direct personal communication with the caller. The interchange would then proceed, person-to-person.

If the caller responds with a proper telephone number, the operation proceeds. Specifically, the system sequences to record the response of the proper telephone number as indicated by the block **45**. That is, the caller's telephone number is recorded in an assigned specific memory cell identified with the caller. The format of the cell C1 is indicated in FIG. 7 showing the individual fields or sections. The first portion, section **53**, contains a form of identification data, i.e., the caller's telephone number, i.e. "(213) 627-2222".

Note that as explained above, if the second attempt to formulate a proper number is successful, as manifest by the block **48** (FIG. 3), the response is recorded at that stage. In either case, exiting from the block **45** (FIG. 3) invokes the next operation of again queuing the voice generator as indicated by the block **56**.

At this juncture, the system proceeds to receive and process the lottery ticket data as well as other data such as the identification data provided by the caller and the data formulated by the computer. The result is a subset of winners, or perhaps ultimately several subsets or sub subsets of winners or potential winners. However, first the lottery ticket number (such as the unique identification number) is entered by the caller as indicated by the block **68**. The lottery number may be stored in section **66** (FIG. 7) of cell C1.

At the outset, the system may test the lottery ticket number on the basis of its format. That is the number is verifiable (as by digit combinations, for example the first two digits may equal the third) and is tested as explained above in relation to the telephone number. If a received number is invalid, the call may be terminated as explained above. Any record may be purged.

If the number is valid, it is next tested as a winner. Essentially, the number is treated as a consumable key,

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entitled for example to a single use for participation. The participation may include an online subset determination of winners and a subsequent offline determination of another subset of winners. These tests are indicated by the block **68**. From that point, as illustrated by the block **70**, data is accumulated for subsequent offline processing.

The detailed operation is not represented in FIG. 3 as it is similar to the operation illustrated by the blocks **42** through **56**. However, again, a proper response is registered in the storage cell C1 as illustrated in FIG. 7 by the number "58".

During the course of the telephonic communication, the processor PR1 formulates identification data for the caller specifically such as: the date and time of the call, the chronological sequence of the call, the assigned designation of the call, and a set of acknowledgment digits for the call. Such data identification is registered in the caller's assigned cell C1 in accordance with the format of FIG. 2 being stored in sections **62**, **64**, **67** and **69**. Note that the data may be stored in a coded interrelationship. For example, the acknowledgment digits may be related to the call record sequence. In the illustrative example, the chronological order number of the caller is 4951. The acknowledge digits may be derived from the sequence number. For example, as illustrated, a coded relationship may be established by adding "two" to each of the individual record sequence digits.

Considering the example numerically:

30	4951
	2222
	6173

Adding without propagated carries:

Note that the confirmation data as acknowledgement digits can be extremely important, as to communicate with an isolated member of a subset. For example, identification of an ultimate winner could be published or circulated, as by a television broadcast, then respondents checked by use of confirmation data that may be confidential.

Continuing with the above example, the call chronological sequence registered for the caller is 4951 as represented in the section **62** while the acknowledge digits are 6173 as registered in the section **66**. Additionally, the processor PR1 develops an assigned designation number, e.g. designation "14951684", which is registered in the section **67**, the acknowledge code or digits, e.g. 6173, being registered in the section **69**. These values are formulated in accordance with conventional number techniques during the data acquisition phase. With the exemplary numerals formulated, the operation proceeds.

In the detailed operation, in addition to entering data from the remote terminal, the processor PR1 (FIG. 1) cues the internal memory as indicated by the block **70** (FIG. 3). Thus, the processor PR1 fetches the call record sequence number, assigns a designation (if not previously assigned, in some cases the sequence number is the designated number), and encodes the sequence number as the acknowledgment digits (if not previously accomplished).

To confirm receipt of the acknowledgement digits, the processor PR1 (FIG. 1) cues the voice generator in the interface **20**, as indicated by the block **72** (FIG. 3) to provide information to the caller. Specifically, for example, the voice generator in the interface **20** (FIG. 1) might signal: "This transaction has been designated by the number 4951684, and is further identified by the acknowledgment digits 6173.

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Please make a record of these numbers as they will be repeated. Specifically, the designation number is 4951684. The acknowledgment digits are 6173. Please acknowledge this transaction by pressing your telephone buttons to indicate the acknowledge digits 6173." In lottery applications typically involving security, the order and acknowledgment of callers may be very important. Therefore, data for confirmation associated with the order is important.

The system next proceeds to the test mode as indicated by the block 76 (FIG. 3). If the caller provides the correct acknowledgment digits, the data is confirmed in the record as indicated by the block 80 and is registered in the cell C1 (FIG. 2). Additionally, the voice generator is sequenced as indicated by the block 82 (FIG. 3) to indicate the close of the communication and that the transaction is terminated as represented by the exit block 84.

In the event that a caller cannot confirm his acknowledgment digits, as indicated by the block 76, a repeat operation is performed as indicated respectively by the blocks 86 and 88. Specifically, the voice generator is queued for a second instructional message. In the event that the second attempt also fails, the data is purged and the call discounted as indicated by block 90 and an exit block 92. If the second try is successful (test block 88), as indicated by the block 80, the record is perfected as indicated above.

As a result of the likelihood of a large number of calls, as described above, data cells in the processors PR1-PRn (FIG. 1) are developed with specific information relating to each call. Such data, accumulated from the various calls may be considered by logic comparisons in the computer 22 to select the subset of winning persons who should be isolated at a later point.

The processing operation usually involves comparison testing which compares caller data from individual memory cells of the processors P1-Pn (FIG. 1) with test data, such as a look-up table, that is supplied through the command terminal CT.

Preliminary to considering an exemplary form of the telephonic-interface lottery system of the present invention, reference will now be made to FIG. 4 showing an exemplary structural form for the processors PR1-PRn. From the switch 21 (FIG. 1) a pair of communication lines 90 and 91 are indicated in FIG. 4 (top left). The line 90 provides signals from a processing unit 92 while the line 91 provides signals to the processing unit 92 along with other components as represented in FIG. 4. The separate lines 90 and 92 facilitate explanation.

The processing unit 92 may take the form of a mini-computer programmed to accommodate the functions of various applications, as disclosed in detail below. As indicated above, the system may utilize a plurality of independent function units or processing units, e.g., processing unit 92, operating in a somewhat parallel configuration, or alternatively, a limited number of processors may be driven sequentially to accommodate the functional operations as described.

The input line 91 (upper left) is connected specifically to a qualification unit 93, a sequencer 94 and a designation unit 96, as well as the processing unit 92 as indicated above. The qualification unit qualifies access from a remote terminal T1-Tn to the processing unit 92 as described in detail below. In accordance with various applications or operating formats, the qualification unit 93, the sequencer 94 and the designation unit 96 operate preliminarily with respect to individual callers. Generally, these units qualify or test callers for entitlement to participate in the lottery, develop

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sequence-of-calls record and provide forms of designations for callers that may be authenticated. As described in detail below, the units function in sequence to accomplish such operations and accordingly are each individually connected to the processing unit 92 and a buffer storage 97. Essentially, the buffer storage 97 is illustrated separately from the processing unit 92 along with the unit 93, sequencer 94, unit 96, and so on, again in order to facilitate the explanation. Similarly illustrated are memory 98 (with cells C1-Cn), a look-up table 103 and clock 105.

Considering the processor of FIG. 4 in further detail, the qualification unit 93 (upper left) is connected to a look-up table 99 and a use-rate calculator 100. The designation unit 96 (top center) is connected to a random number generator 101 and an encryptor 102.

In view of the above structural description of the system, consideration will now be given to a certain specific application in relation to the operation of the system.

As the illustrative operating format, an embodiment of the telephonic-interface lottery system will now be described. The legalized state lottery typically features various "scratch-off" ticket lottery game formats such as "the California Classic", "Treasure Hunt", "Blackjack", "Lucky 7's" and the like. In addition, lotteries typically offer online games such as Lotto. The enhanced lottery system accommodated by the present telephone system may utilize pay-to-dial numbers ("900-xxxx") or toll free 800 numbers and may be restricted to a limited number of uses for defined intervals of time. For example, a person might be entitled to play the lottery only a limited number of times or to the extent of a limited dollar value during a predetermined interval.

Certain digits of the unique identification number may contain information on a particular format, for example the "California Classic". Multiple formats may run simultaneously and the DNIS for example may indicate the lottery format and processing for each game. Additionally digits in the unique number when entered by the caller might indicate a telephone subformat.

Referring now to FIG. 2, a lottery participant upon purchasing a "scratch-off" lottery ticket LT for use in the system D has at least two chances to win. The first chance is facilitated by a lottery format defining a winning combination, for example by matching three like dollar amounts or symbols from a plurality provided in a first section S1. Subsequent chances are provided by telephone communication in accordance herewith. Preliminarily, consider the specific structure of a ticket in accordance herewith.

The lottery ticket LT is made from any suitable base substrate typically used and is likewise suitably sized to accommodate all the information. A scratch-off layer covers part or all of the ticket. Structurally, the ticket LT is a composite including a base substrate L1 (FIG. 2a) bearing a latex scratch-off layer L2. Visible print or indicia L3 appears on the latex layer L2 which may be integral or over stamped. Concealed indicia L4 is fixed on the substrate L1 and is revealed when the latex layer is removed. As illustrated in FIG. 2, the concealing areas S1 and S2 of the latex layer L2 are illustrated by wavy lines, accordingly normally concealed indicia is revealed.

As illustrated in FIG. 2, the upper section S1 of the scratch-off latex layer L2 defines ticket-specified winners. That is, as indicated above, matching combinations or symbols define winners. The lower scratch-off section S2 of the ticket LT indicates a unique identification number UN

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which may be several digits. The first section S1 and at least a portion of the identification number UN is covered with a suitable substance, such as latex in order to conceal the lottery format and the complete identification number from the lottery participants, retailers and the like and prevent any fraudulent activity. The unique identification number may also be the stock number (sequence number assigned by the lottery for each ticket to keep track thereof) of the lottery ticket with additional concealed or latex protected digits.

The lottery ticket LT also indicates the pay-to-dial telephone number indicia 59 to facilitate additional chances to win. For example, the lottery ticket LT bears indicia 61 indicating "For Another Chance call 900-555-1212". Accordingly, regardless of whether the lottery ticket LT defines a winning combination, the lottery participant has another chance to possibly win by dialing the pay-to-dial number and incurring a further minimal cost, for example 50 cents. In some formats all players including winners of the matching combinations are provided with an additional opportunity to win. Note that the ticket LT also carries another number as indicated by the unconcealed indicia 63.

The lottery ticket LT on its reverse side is provided with a bar code BC defining a number corresponding to the unique identification number UN which would allow the retailer or the lottery system to verify instant winners when the lottery tickets are redeemed and automatically cancel related information on the data stored in the memory.

Pursuing the operation of the system in greater detail, using the specified calling number (900 555 1212) from the terminal T1 (FIG. 1) the caller would actuate the push buttons 14 to establish contact with the processing system P1. Communication would be through the communication facility C, the automatic call distributor AC1, the interface 20 and the switch 21 as described in detail above.

The initial operation involves qualification of the caller to participate in the lottery. Again, ANI or caller interface techniques may be employed as described above. If the caller is involved, the interface 20 is actuated by the qualification unit 93 during the operating interval t1 to instruct the caller: "Please key in your telephone calling number". As indicated above, an alternative involves the system simply registering the calling number on the basis of its provision by ANI equipment. As indicated above, in one sequence the callers telephone number is tested at this point. Also, the lottery number also may be tested at this stage or subsequently. Various sequences are practical, another of which involves data accumulation prior to winner tests.

After the caller's telephone number is registered, the instruction is given: "Participation in the lottery is for persons over twenty-one years of age. Accordingly, please key in the year of your birth". A birth date, social security number, driver's license or credit card number may be similarly registered to confirm age or confirm identification of caller. Alternatively, the combination of telephone number and date or year of birth or age could be used. In any event, the caller's data is registered and the qualification unit 93 then functions to test the data as provided. Specifically, the caller's telephone number is checked in a look-up table 99 to determine whether or not it is a proper and currently valid number for use in the lottery.

If the data indicates a qualified caller, the system proceeds to the next phase of designating the transaction. The designation unit 96 operates during the interval t3 to provide the caller with a designation for the current transaction which may be the sequence number. As explained above, the random generator 101 with or without the encryptor 102

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may be employed to create an identification number which may include an encrypted form of the caller's telephone number. Accordingly, data for the transaction is established in the buffer 97 then set in a cell of the memory 98 (FIG. 4). Specifically, the completed data cell format might be as follows: Telephone No.—Birth Year—Designation—Random No. In the format being described, the system next functions to generate the random number as indicated above which will then be tested against a series of other numbers to determine whether or not the caller is a winner. In that regard, elements in the processing unit 92 which accomplish the operation are illustrated in FIG. 6 which will now be considered in detail.

Typically, a caller will have scratched off the latex layer L2 over the section S2 prior to placing a call to the lottery interface system. Depending on the operating sequence employed, at some point, the caller is cued to input the number carried by the indicia UN. Specifically, the number is simply entered using the terminal touch tone keypad. As a result winners can be selected with online processing while the caller is on the phone as well as by off-line processing at a later designated time. Both online and off-line winners can be selected by determining a winning sequence number or by selecting a random lottery number or selecting a random sequence number.

A random number generator 160 functions on command to provide a three-digit number. With the consummation of a call, the random number generator 160 is actuated to provide the caller's random number in a selected caller cell 162. From that location, the caller's random number is compared with numbers from a register 164 by a comparator 166. The numbers in the register 164 were previously passed through a gate 174 from the generator 160. In the event of coincidence, the comparator provides an output "yes" signal to a line 168. Conversely, the failure of coincidence prompts the comparator 166 to provide a "no" output to a line 170. Essentially, a "yes" indicates a win while a "not" indicates the caller has lost.

The elements of FIG. 6 provide a random operating format to determine winners on a somewhat statistical basis; however, the system increases the probability with the passage of time when no win occurs. In that regard, at the outset of an operating cycle, the random number generator 160 provides a random number that is passed through the gate 174 to the register 164. In the exemplary format, a three-digit number would be provided. At that stage, the caller's random number, from the cell 162, would be compared with the single number in the register 164 by the comparator 166. However, with the passage of time, calls are tallied or time is metered by a counter 178. Accordingly, upon the attainment of a predetermined count, the gate 174 is again qualified to enter another number in the register 164. Accordingly, an increasing set of numbers are held in the register 164 for comparison with each caller's number. Of course, the more numbers in the register 164, the higher probability of a caller winning and that relationship depends upon the duration or number of calls since the last winner.

Either a win or a loss as indicated within the processing unit 92 (FIG. 4) prompts the interface 20 to respond appropriately to the caller announcing his results. If there is a win, the designation may be reinforced and additional identification may be taken as explained above. Of course, if the prize simply involves a credit on the caller's telephone bill or his credit account, identification and designation become less critical considerations.

In the event of awards to be claimed, the processing system P1 (FIG. 1) may actuate the printer PR to produce a

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positive identification of the winner, which document may be redeemed only by the caller providing the assigned designation along with confirmation of his identification data.

Generally in relation to awards, the processing unit 92 may also utilize a random number format for determining the significance of awards. That is, a random number may be actuated to provide numerals from one through twenty, for example, the magnitude of the number generated for a caller indicating the significance of his award. Normally such information would be provided to the caller and registered in his memory cell.

With respect to memory cells generally, it is to be noted that actuated memory cells may be cleared for callers who are not winners. Accordingly, a limited number of memory cells store the subset of winners for subsequent confirmation processing and so on. Alternatively, historical data cells for each caller may be maintained.

As explained above, clearances may be perfected through the look-up table 99 (FIG. 4) in association with the qualification unit 93 or approvals through a consumable key step may be extended to incorporate functions of the processing unit 92 in association with the memory 98. For example, if qualification simply involves a check-off operation, the look-up table 99 will normally be employed.

As explained above, the arrangement of the function unit (or units) may be variously embodied in a single processor or many processors, depending on various considerations as time sharing, multiplexing, paralleling and so on. The systems as described above embody the components bulked together in one location. However, components of the system could be spaced apart geographically, using dedicated lines or polling techniques. An illustrative embodiment is shown in FIG. 9.

Call distributors CD1-CDn are located at different geographic locations along with associated interface units IA1-IA_n and IB1-IB_n. Each of the interface units, as unit IA1 is coupled to an interface central processing unit 260 as indicated by lines 252, 254, 256 and 258. The interface CPU 40 260 may be located geographically proximate the interface units, for example in Omaha, to record and store the data relating to each caller, including the data provided by the caller and the data formulated by the computer in a data file 264 coupled thereto as indicated at line 266. Each of the 45 lines may take the form of a dedicated telephone line or a polling telephonic coupling. The interface central processing unit 260 is coupled to a lottery central processing unit 251 indicated at line 262 which may be located remote from the interface central processing unit 260 as for example in 50 Indianapolis.

In the operation of the system of FIG. 9, the call distributors CD are coupled to a telephonic communication system and accordingly allow the interface units I and the interface CPU 260 to provide interface communication between the 55 lottery central processing unit 251 and a multitude of remote terminals T1-T_n. The interface central processing unit 260 stores complete data with regard to each caller in the data file 264. The interface central processing unit 260 may variously transmit or download important data only, for example the unique identification or ticket number and prize type (such as B) or prize amount (\$50) stored in section 65 (FIG. 7) to the lottery central processing unit 251. Accumulated data with regard to a plurality of callers may be transmitted at a designated time to save on transmission time and cost. Downloaded data for the additional chances is also stored at a file 270. Thus, the distributed-component system is

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capable of executing the various formats as explained above with reference to the illustrative structure.

In view of the above explanation of exemplary systems, it will be appreciated that other embodiments of the present invention may be employed in many applications to accumulate statistical data, process such data, and define subsets of callers of concern. While certain exemplary operations have been stated herein, and certain detailed structures have been disclosed, the appropriate scope hereof is deemed to be in accordance with the claims as set forth below.

What is claimed is:

1. A method for conducting a telephonic-interface ticket control operation for use with a communication facility including remote terminal apparatus for individual callers, including voice communication means, and digital input means in the form of an array of alphabetic numeric buttons for providing identification data, comprising the steps of:
 assigning a predetermined limit on access to an interactive call processing format;
 receiving dialed number identification signals automatically provided from the communication facility (DNIS) to indicate a called number, wherein said called number is indicative of said interactive call processing format selected from a plurality of different interactive call processing formats under control of said dialed number identification signals (DNIS) and also receiving calling number identification signals automatically provided from the communication facility;
 storing the calling number identification signals and using the calling number identification signals to control certain operations of the interactive call processing format;
 providing an identification number on a ticket, said identification number entered by each individual caller via said digital input means to access said interactive call processing format until said predetermined limit is reached;
 storing data indicative of an extent of access accomplished for said identification number entered by each individual caller;
 testing said data indicative of said extent of access accomplished against said predetermined limit on access to determine if said predetermined limit on access is reached and further testing to limit access during a predetermined interval of time, wherein if the predetermined limit on access is reached by a particular caller, communication with that caller is terminated or that caller is transferred to an interface terminal for communication with an operator; and
 providing a distinct indicia associated with said ticket and co-relating said distinct indicia to at least a portion of said identification number.
2. A method for conducting a telephonic-interface ticket control operation as defined in claim 1, wherein said testing step further comprises the step of:
 testing said identification number with a check digit test.
3. A method for conducting a telephonic-interface ticket control operation as defined in claim 1, wherein said testing step further comprises the step of:
 testing said identification number based on entitlement.
4. A method for conducting a telephonic-interface ticket control operation as defined in claim 1, further comprising the step of:
 concealing at least a portion of said identification number.
5. A method for conducting a telephonic-interface ticket control operation as defined in claim 4, wherein said concealing step further comprises the step of:

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applying an obscuring material to said identification number.

6. A method for conducting a telephonic-interface ticket control operation as defined in claim **5**, wherein said applying step further comprises the step of:

using a latex coating as said obscuring material.

7. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

recording the date and time at which each call occurs.

8. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, wherein said distinct indicia associated with said ticket is a bar code indicia on said ticket.

9. A method for conducting a telephonic-interface ticket control operation as defined in claim **8**, further comprising the step of:

utilizing said bar code indicia for automatic entry of data for accessing related stored information including said identification number.

10. A method for conducting a telephonic-interface ticket control operation as defined in claim **9**, further comprising the step of:

rendering said ticket ineffective by utilizing said bar code indicia to cancel said related stored information including said identification number.

11. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

providing said identification data as indicia on said ticket along with said distinct indicia and an additional numerical indicia.

12. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

recording additional identification data provided by the caller.

13. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

recording said caller's credit card number.

14. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

recording at least two separate types of caller provided identification data.

15. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

processing said identification number online.

16. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

providing visual indicia on a ticket illustrative of a name of a specific interactive call processing format from a plurality of names of interactive call processing formats.

17. A method according to claim **16**, wherein said visual indicia further includes a specific visual theme associated with said interactive call processing format taken from a plurality of visual themes associated with a plurality of different interactive call processing formats.

18. A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

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receiving digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility.

5. **19.** A method for conducting a telephonic-interface ticket control on operation as defined in claim **18**, further comprising the step of:

storing said digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility.

10. **20.** A method for conducting a telephonic-interface ticket control operation as defined in claim **18**, wherein said testing step further includes a preliminary test for testing digital

15. signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility to limit or prevent access to said interactive call processing format.

20. **21.** A method according to claim **18**, further comprising the step of:

processing said data indicative of said extent of access in accordance with said interactive call processing format, and utilizing said digital signals representing calling number identification data associated with said remote terminal apparatus for said processing.

22. **21.** A method for conducting a telephonic-interface ticket control operation as defined in claim **18**, wherein said testing step further includes the use of said digital signals representing calling number identification data to at least in part control the extent of access.

23. **22.** A method for conducting a telephonic-interface ticket control operation as defined in claim **18**, wherein said digital signals representing calling number identification data control at least certain aspects of said ticket control operation.

24. **23.** A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

interfacing a plurality of calls from said individual callers via an automatic call distributor for access to said interactive call processing format.

25. **24.** A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, wherein at least certain digits of said identification number entered by certain of said individual callers indicate a select subformat.

45. **26.** **25.** A method for conducting a telephonic-interface ticket control operation according to claim **1**, further comprising the step of:

processing data entered by each of said individual callers and utilizing at least part of said data to select at least one subset of at least one caller from said individual callers.

50. **27.** **26.** A method for conducting a telephonic-interface ticket control operation according to claim **1**, further comprising the step of:

providing visual indicia on said ticket including a specific visual theme associated with said interactive call processing format selected from a plurality of visual themes associated with a plurality of interactive call processing formats.

55. **28.** **27.** A method for conducting a telephonic-interface ticket control operation as defined in claim **1**, further comprising the step of:

prompting said individual callers via a voice generator to enter data; and
storing at least certain of said data responsive to said prompting step.

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29. A method for conducting a telephonic-interface ticket control operation as defined in claim 1, wherein access is limited based upon a limited number of uses.

30. A method for conducting a telephonic-interface ticket control operation as defined in claim 29, wherein the access is limited based upon a limited number of uses in a predetermined interval of time.

31. A method of conducting a telephone-interface ticket control operation as defined in claim 29, wherein the access is limited based upon a limited number of uses for defined intervals of time.

32. A method for conducting a telephonic-interface ticket control operation as defined in claim 29, wherein access is limited based upon a limited number of uses for a predetermined interval of time.

33. A method for conducting a telephonic-interface ticket control operation as defined in claim 29, further comprising the step of:

receiving digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility.

34. A method for conducting a telephonic-interface ticket control operation as defined in claim 29, wherein said testing step further includes the use of said digital signals representing calling number identification data to at least in part control the extent of access.

35. A method for conducting a telephonic-interface ticket control operation as defined in claim 29, further comprising the step of:

providing visual indicia on a ticket illustrative of a name of a specific interactive call processing format from a plurality of names of interactive call processing formats.

36. A method for conducting a telephonic-interface ticket control operation as defined in claim 29, further comprising the step of:

concealing at least a portion of said identification number.

37. A method for conducting a telephonic-interface ticket control operation as defined in claim 36, wherein said concealing step further comprises the step of:

applying obscuring material to said identification number.

38. A method for conducting a telephonic-interface ticket control operation as defined in claim 1, wherein access is limited based upon a limited dollar value.

39. A method for conducting a telephonic-interface ticket control operation as defined in claim 38, wherein the access is limited based upon a limited number of uses in a predetermined interval of time.

40. A method of conducting a telephonic-interface ticket control operation as defined in claim 38, wherein the access is limited based upon a limited number of uses for defined intervals of time.

41. A method for conducting a telephonic-interface ticket control operation as defined in claim 38, wherein access is limited based upon a limited number of uses for a predetermined interval of time.

42. A method for conducting a telephonic-interface ticket control operation as defined in claim 38, further comprising the step of:

receiving digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility.

43. A method for conducting a telephonic-interface ticket control operation as defined in claim 38, wherein said testing

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step further includes the use of said digital signals representing calling number identification data to at least in part control the extent of access.

44. A method for conducting a telephonic-interface ticket control operation as defined in claim 38, further comprising the step of:

providing visual indicia on a ticket illustrative of a name of a specific interactive call processing format from a plurality of names of interactive call processing formats.

45. A method for conducting a telephonic-interface ticket control operation as defined in claim 38, further comprising the step of:

concealing at least a portion of said identification number.

46. A method for conducting a telephonic-interface ticket control operation as defined in claim 45, wherein said concealing step further comprises the step of:

applying obscuring material to said identification number.

47. A method for conducting a telephonic-interface ticket control operation as defined in claim 1, wherein said called number is a toll free number selected from a plurality of toll free numbers under control of said dialed number identification signals (DNIS).

48. A method for conducting a telephonic-interface ticket control operation as defined in claim 1, further comprising the step of:

utilizing a clock to limit access during said predetermined interval of time.

49. A method according to claim 1, wherein certain digits of said identification number contain information specific to each of said plurality of interactive call processing formats and said digits are tested for entitlement to access said interactive call processing format selected from said plurality of interactive call processing formats.

50. A telephonic-interface ticket control system for use with a communication facility including remote terminal apparatus for individual callers to call, including voice communication means, and digital input means in the form of an array of alphabetic numeric buttons for providing identification data, said telephonic-interface ticket control system comprising:

interface means couple to said communication facility to interface said remote terminal apparatus for voice and digital communication with said individual callers wherein dialed number identification signals are automatically provided from said communication facility (DNIS) to identify a called number from a plurality of called numbers and calling number identification signals are automatically provided from the communication facility to identify a calling number;

voice generator means coupled through said interface means for providing vocal instructions to an individual caller to enter identification data from a ticket, said ticket having associated therewith a distinct indicia co-related to said identification data;

memory means coupled to said interface means for storing said identification data and data indicative of an extent of access accomplished by said individual callers as well as the calling number identification signals that are used to control certain operations of the telephonic-interface ticket control system; and

qualification means coupled to said interface means for limiting access to said ticket control system based on said extent of access accomplished by said individual callers and wherein if the extent of access is reached by a particular caller, communication with that caller is

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terminated or that caller is transferred to an interface for communication with an operator.

51. A telephonic-interface ticket control system according to claim **50**, wherein said plurality of called numbers are indicative of a plurality of different operating formats.

52. A telephonic-interface ticket control system according to claim **51**, wherein access to said plurality of different operating formats are provided via different toll free numbers.

53. A telephonic-interface ticket control system according to claim **51**, wherein at least certain digits of said identification data entered by each individual caller indicate a select telephone subformat.

54. A telephonic-interface ticket control system according to claim **50**, wherein said qualification means utilizes a look-up table to determine if a limit on access is reached.

55. A telephonic-interface ticket control system according to claim **50**, wherein said qualification means limits access to a one time use only.

56. A telephonic-interface ticket control system according to claim **50**, further comprising:

means for generating sequence data for each individual call.

57. A telephonic-interface ticket control system according to claim **50**, further comprising:

means for controlling recording of data in said memory
means with respect to the date or time at which each call occurs or both.

58. A telephonic-interface ticket control system according to claim **50**, further comprising:

receiving means for receiving digital signals representing
calling number identification data associated with said
remote terminal apparatus automatically provided by
said communication facility.

59. A telephonic-interface ticket control system according to claim **58**, wherein said digital signals are utilized for automated processing of said ticket.

60. A telephonic-interface ticket control system according to claim **58**, wherein said memory means stores said digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility.

61. A telephonic-interface ticket control system according to claim **60**, wherein said qualification means tests digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility to limit or prevent access to said ticket control system.

62. A telephonic-interface control system according to claim **50**, wherein said distinct indicia is a bar code indicia on said ticket.

63. A telephonic-interface control system according to claim **50**, wherein said bar code distinct indicia is machine readable and is utilized for automatic entry of data for accessing related stored information including said identification number.

64. A telephonic-interface control system as defined in claim **63**, further comprising: means for rendering said ticket ineffective by utilizing said machine readable indicia to cancel related stored information including said identification number.

65. A telephonic-interface control system according to claim **50**, wherein said qualification means also tests to limit access during a predetermined interval of time.

66. A telephonic-interface ticket control system as defined in claim **50**, wherein said ticket bears numerical indicia in addition to machine readable indicia and identification data indicia.

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67. A telephonic-interface ticket control system as defined in claim **50**, wherein at least a portion of said identification data is concealed.

68. A telephonic-interface ticket control system as defined in claim **67**, wherein at least a portion of said identification data is concealed with an obscuring material.

69. A telephonic-interface ticket control system as defined in claim **67**, wherein at least a portion of said identification data is concealed with a latex coating.

70. A telephonic-interface ticket control system according to claim **50**, wherein said qualification means limits access to a limited number of uses.

71. A telephonic-interface ticket control system according to claim **50**, wherein said qualification means limits access to a specified dollar amount.

72. A telephonic-interface control system for use with a communication facility including remote terminal apparatus for individual callers to call, including voice communication means, and digital input means in the form of an array of alphabetic numeric buttons for providing identification data, said telephonic-interface control system comprising:

interface means coupled to said communication facility to interface said remote terminal apparatus for voice and digital communication with said individual callers based upon dialed number identification signals (DNIS) indicative of a called number provided automatically from said communication facility, said interface means also receiving calling number identification signals provided automatically by the communication facility to identify a calling number, said interface means using said calling number identification signals for controlling certain operations of the telephonic-interface control system;

voice generator means coupled through said interface means for providing vocal instructions to an individual caller to enter data and identification data;

processing means for processing said data supplied by said individual callers, said processing means coupled to said interface means and selecting at least one subset of at least one caller from said individual callers;

qualification means coupled to said interface means for limiting access during at least an interval of time to said processing means based upon comparing said identification data with previously stored identification data and wherein if a particular individual caller is not qualified, communication with that caller is either terminated or that caller is transferred to an interface terminal for communication with an operator; and

means for storing coupled to said interface means for storing said data in association with said previously stored identification data.

73. A telephonic-interface control system as defined in claim **72**, wherein said qualification means utilizes a look-up table to determine if a limit on an extent of access is exceeded.

74. A telephonic-interface control system according to claim **73**, wherein said limit on access relates to a limited number of uses.

75. A telephonic-interface control system according to claim **73**, wherein said limit on access relates to a limit on a dollar amount.

76. A telephonic-interface control system according to claim **75**, wherein said limit on a dollar amount is during a predetermined interval of time.

77. A telephonic-interface control system according to claim **75**, wherein said limit on access relates to a limit on

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a dollar amount in a defined intervals of time in accordance with a use rate calculator.

78. A telephonic-interface control system as defined in claim **72**, wherein said processing means selects said subset offline subsequent to accumulating data with regard to a ⁵ multitude of said individual callers.

79. A telephonic-interface control system as defined in claim **72**, wherein said called number is one of a plurality of called numbers associated with a plurality of distinct operating formats.

80. A telephonic-interface control system according to claim **79**, wherein one of said plurality of formats is accessed by a toll free number and another format is accessed by a pay to dial number. ¹⁰

81. A telephonic-interface control system according to claim **79**, wherein one of said formats is accessed by a pay to dial number and a toll free number and another of said formats is accessed by another toll free number. ¹⁵

82. A telephonic-interface control system as defined in claim **72**, wherein said dialed number identification signals (DNIS) identify one called number from a plurality of ²⁰ distinct called numbers including toll free called numbers.

83. A telephonic-interface control system according to claim **72**, wherein sequence data indicative of calling order sequence is generated and stored for certain of said individual callers.

84. A telephonic-interface control system as defined in claim **72**, wherein said processing means selects said subset on-line.

85. A telephonic-interface control system according to claim **72**, wherein said identification data is provided on a ³⁰ ticket.

86. A telephonic-interface control system according to claim **85**, wherein said identification data and a machine readable indicia are provided on a ticket.

87. A telephonic-interface control system according to claim **86**, wherein machine readable indicia on said ticket is co-related to at least a portion of said identification data and said machine readable indicia is utilized for automatic entry of data for accessing purposes. ³⁵

88. A method for conducting a telephonic-interface ticket control operation for use with a communication facility including remote terminal apparatus for individual callers, including a voice communication device, and a digital input device in the form of an array of alphabetic numeric buttons for providing identification data, comprising the steps of:

providing dialed number identification signals automatically from the communication facility (DNIS) to provide digital identification data indicating a called number, wherein said called number is indicative of an interactive call processing format selected from a plurality of different interactive call processing formats under control of said dialed number identification signals (DNIS) and also providing calling number identification signals automatically from the communication facility to identify a calling number, the calling number identification signals used to control at least a part of the telephonic-interface ticket control operation;

assigning at least one predetermined limit on access to said interactive call processing format;

providing an identification number on a ticket, said identification number entered by each individual caller via said digital input device to access said interactive call processing format until said at least one predetermined limit is reached and providing visual indicia on said ticket illustrative of a specific theme from a plurality of different themes and providing a name or a numerical value on said ticket associated with said specific theme; ⁶⁰

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storing data indicative of an extent of access accomplished for said identification number entered by each individual caller;

testing said data indicative of said extent of access accomplished against said at least one predetermined limit on access to determine if said at least one predetermined limit on access is reached and if said at least one predetermined limit on access is reached by a particular caller, communication with the caller is either terminated or transferred to an interface terminal for communication with an operator;

providing a distinct indicia associated with said ticket; prompting said individual callers via a voice generator to enter data;

storing at least certain of said data responsive to said prompting step; and

co-relating said distinct indicia to at least a portion of said identification number. ¹⁵

89. A method according to claim **88**, further comprising the step of:

processing at least certain of said data responsive to said step of prompting.

90. A method according to claim **89**, further comprising the steps of:

receiving calling number identification signals automatically provided by the communication facility; and utilizing at least a part of the calling number identification signals to control at least a part of the processing. ²⁵

91. A method according to claim **88**, further comprising the step of:

concealing at least a portion of said identification number. ³⁰

92. A method according to claim **88**, further comprising the step of:

applying an obscuring material to said identification number. ³⁵

93. A method according to claim **88**, wherein said distinct indicia associated with said ticket, being machine readable indicia on said ticket. ⁴⁰

94. A method according to claim **88**, further comprising the step of:

utilizing said indicia which is machine readable for automatic entry of data for accessing related stored information including at least a portion of said identification number. ⁴⁵

95. A method according to claim **94**, wherein said machine readable indicia is a bar code.

96. A method according to claim **88**, further comprising the step of:

recording additional data provided by callers in the form of callers' credit card numbers. ⁵⁰

97. A method according to claim **88**, wherein said testing step further includes testing digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility, said testing of the calling number identification data to limit or prevent access to said interactive call processing format. ⁵⁵

98. A method according to claim **88**, wherein access is limited based upon a limited dollar value. ⁶⁰

99. A method according to claim **88**, wherein at least certain digits of said identification data entered by each individual caller indicate a select telephone subformat. ⁶⁵

100. A method according to claim **88**, wherein said at least one predetermined limit on access is indicative of a number of uses.

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101. A method according to claim 88, wherein said ticket bears both said name and said numerical value associated with said specific theme.

102. A method for conducting a telephonic-interface ticket control operation for use with a communication facility including remote terminal apparatus for individual callers, including voice communication means, and digital input means in the form of an array of alphabetic numeric buttons for providing identification data, comprising the steps of:

providing dialed number identification signals automatically from the communication facility (DNIS) to provide digital identification data indicating a called number, wherein said called number is indicative of an interactive call processing format selected from a plurality of different interactive call processing formats under control of said dialed number identification signals (DNIS) and also providing calling number identification signals automatically from the communication facility to identify a calling number, the calling number identification signals used to control at least a part of the telephonic-interface ticket control operation;

assigning at least one predetermined limit on access to said interactive call processing format;

providing an identification number on a ticket, said identification number entered by each individual caller via said digital input device to access said interactive call processing format until said at least one predetermined limit is reached and providing visual indicia on said ticket illustrative of a visual theme from a plurality of different visual themes and providing a name or a numerical value on said ticket associated with said specific tickets;

storing data indicative of an extent of access accomplished for said identification number entered by each individual caller;

testing said indicative of said extent of access accomplished against said at least one predetermined limit on access to determine if said at least one predetermined limit on access is reached and if the one predetermined limit access is reach by a particular caller, communication with that caller is terminated or that caller is transferred to an interface terminal for communication with an operator;

providing a distinct indicia associated with said ticket; prompting said individual callers via a voice generator to enter data;

storing at least certain of said data responsive to said prompting step; and

providing indicia indicating a toll free number for callers to dial from a plurality of toll free numbers, where said indicia indicative of said toll free number is related to a specific one of said visual themes.

103. A method according to claim 102, wherein said ticket bears both said name and said numerical value associated with said specific ticket.

104. A method according to claim 102, wherein at least certain digits of said identification data entered by each individual caller indicate a select telephone subformat.

105. A method according to claim 102, wherein said at least one predetermined limit specifies a dollar amount.

106. A method according to claim 102, wherein said at least one predetermined limit specifies a number of uses.

107. A method according to claim 102, comprising: further testing to limit access during at least one predetermined interval of time.

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108. A method according to claim 102, further comprising the step of:

processing at least certain of said data responsive to said step of prompting.

109. A method according to claim 108, further comprising the steps of:

receiving calling number identification signals automatically provided by the communication facility; and utilizing at least a part of the calling number identification signals to control at least a part of the processing.

110. A method for conducting a telephonic-interface ticket control operation for use with a communication facility including remote terminal apparatus for individual callers, including a voice communication device, and a digital input device in the form of an array of alphabetic numeric buttons for providing identification data, comprising the steps of:

providing dialed number identification signals automatically from the communication facility (DNIS) to provide digital identification data indicating a called number from a plurality of called numbers and wherein said called number is indicative of said interactive call processing format selected from a plurality of different interactive call processing formats under control of said dialed number identification signals (DNIS) and wherein said called number is indicative of said interactive call processing format selected from a plurality of different interactive call processing formats under control of said dialed number identification signals (DNIS) and also providing calling number identification signals automatically from the communication facility to identify a calling number, the calling number identification signals used to control at least a part of the telephonic-interface ticket control operation;

assigning at least one predetermined limit on access to an interactive call processing format;

providing an identification number on a ticket, said identification number entered by each individual caller via said digital input device to access said interactive call processing format until said at least one predetermined limit is reached;

storing data indicative of an extent of access accomplished for said identification number entered by each individual caller;

testing said data indicative of said extent of access accomplished against said at least one predetermined limit on access to determine if said at least one predetermined limit on access is reached and further testing to limit access during at least one predetermined interval of time and if the at least one predetermined limit on access is reached by a particular caller, communication with that caller is terminated or that caller is transferred to an interface terminal for communication with an operator;

providing a distinct indicia associated with said ticket and co-relating said distinct indicia to at least a portion of said identification number;

providing visual indicia on said ticket illustrative of a specific theme from a plurality of themes and providing a specific name or a numerical value associated with said specific ticket;

prompting said individual callers via a voice generator to enter data; and

storing at least certain of said data responsive to said prompting step.

111. A method according to claim 110, further comprising the step of:

concealing at least a portion of said identification number.

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112. A method according to claim **111**, wherein said concealing step further comprises the step of:

applying an obscuring material to said identification number.

113. A method according to claim **112**, further comprising:

using a latex coating as said obscuring material.

114. A method according to claim **110**, wherein said distinct indicia associated with said ticket is a machine readable indicia on said ticket.

115. A method according to claim **110**, further comprising the step of:

utilizing said distinct indicia which is machine readable for automatic entry of data for accessing related stored information including said identification number.

116. A method according to claim **110**, further comprising the step of:

providing said identification data as indicia on said ticket along with said distinct indicia and an additional numerical indicia.

117. A method according to claim **110**, further comprising the step of:

recording additional identification data provided by the caller.

118. A method according to claim **110**, further comprising the step of:

recording said caller's credit card number.

119. A method according to claim **110**, wherein at least certain digits of said identification data entered by each individual caller indicate a select telephone subformat.

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120. A method according to claim **110**, further comprising the step of:

receiving digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility.

121. A method according to claim **120**, further comprising the step of:

storing said digital signals representing numbers associated with said remote terminal apparatus automatically provided by said communication facility.

122. A method according to claim **110**, wherein said testing step further includes testing digital signals representing calling number identification data associated with said remote terminal apparatus automatically provided by said communication facility, said testing of the calling number identification data to limit or prevent access to said interactive call processing format.

123. A method according to **110**, wherein said at least one predetermined limit specifies a dollar limit.

124. A method according to claim **110**, wherein said at least one predetermined limit specifies a number of uses.

125. A method according to claim **110**, wherein said ticket bears both said name and said numerical value associated with said specific ticket.

* * * * *

EXHIBIT 17

(12) United States Patent
Katz(10) Patent No.: US 6,434,223 B2
(45) Date of Patent: *Aug. 13, 2002

(54) TELEPHONE INTERFACE CALL PROCESSING SYSTEM WITH CALL SELECTIVITY

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(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 09/313,120

(22) Filed: May 17, 1999

Related U.S. Application Data

(63) Continuation of application No. 08/480,185, filed on Jun. 7, 1995, now Pat. No. 5,974,120, which is a continuation of application No. 08/132,062, filed on Oct. 4, 1993, now Pat. No. 5,828,734, which is a continuation of application No. 07/779,762, filed on Oct. 21, 1991, now Pat. No. 5,251,252, which is a continuation of application No. 07/425,779, filed on Oct. 23, 1989, now Pat. No. 5,128,984, which is a continuation-in-part of application No. 07/312,792, filed on Feb. 21, 1989, now Pat. No. 5,073,929, which is a continuation-in-part of application No. 07/194,258, filed on May 16, 1988, now Pat. No. 4,845,739, which is a continuation-in-part of application No. 07/018,244, filed on Feb. 24, 1987, now Pat. No. 4,792,968, which is a continuation-in-part of application No. 06/753,299, filed on Jul. 10, 1985, now abandoned, said application No. 08/132,062, is a continuation-in-part of application No. 08/306,751, filed on Sep. 14, 1994, which is a continuation of application No. 08/047,241, filed on Apr. 13, 1993, now Pat. No. 5,351,285, which is a continuation of application No. 07/509,691, filed on Apr. 16, 1990, now abandoned, and a continuation-in-part of application No. 07/640,337, filed on Jan. 11, 1991, now abandoned.

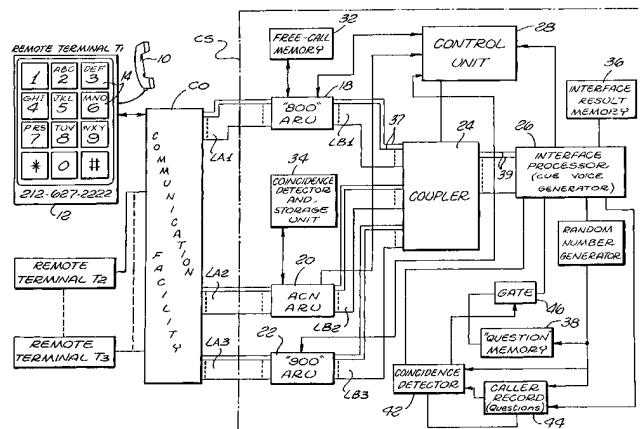
done, which is a continuation of application No. 07/335,923, filed on Apr. 10, 1989, now Pat. No. 6,016,334, which is a continuation of application No. 07/194,258, filed on May 16, 1988, now Pat. No. 4,845,739, which is a continuation-in-part of application No. 07/018,244, filed on Feb. 24, 1987, now Pat. No. 4,792,968, which is a continuation-in-part of application No. 06/753,299, filed on Jul. 10, 1985, now abandoned, said application No. 07/509,691, is a continuation-in-part of application No. 07/260,104, filed on Oct. 20, 1998, now Pat. No. 4,930,150, which is a continuation-in-part of application No. 07/018,244, filed on Feb. 24, 1987, now Pat. No. 4,792,968, which is a continuation-in-part of application No. 06/753,299, filed on Jul. 10, 1985, now abandoned, said application No. 08/132,062, is a continuation-in-part of application No. 07/335,923, filed on Apr. 10, 1989, now Pat. No. 6,016,334, which is a continuation of application No. 07/194,258, filed on May 16, 1988, now Pat. No. 4,845,739, which is a continuation-in-part of application No. 07/018,244, filed on Feb. 27, 1987, now Pat. No. 4,792,968, which is a continuation-in-part of application No. 06/753,299, filed on Jul. 10, 1985, now abandoned.

(51) Int. Cl.⁷ H04M 11/00
 (52) U.S. Cl. 379/93.13, 379/93.02
 (58) Field of Search 379/93.13, 88.01, 379/88.19, 88.2, 93.02, 93.03, 91.01, 91.02, 93.26

(56) References Cited

U.S. PATENT DOCUMENTS

2,902,541 A	9/1959	Singleton
2,941,161 A	6/1960	Scantlin
3,060,275 A	10/1962	Meacham et al.
3,076,059 A	1/1963	Meacham et al.
3,082,402 A	3/1963	Scantlin
3,128,349 A	4/1964	Boesch et al.
3,159,818 A	12/1964	Scantlin
3,246,082 A	4/1966	Levy
3,249,919 A	5/1966	Scantlin
3,299,210 A	1/1967	Bandy
3,337,847 A	8/1967	Olsson et al.
3,347,988 A	10/1967	Marill et al.
3,371,162 A	2/1968	Scantlin
3,381,270 A	4/1968	James
3,393,272 A	7/1968	Hanson
3,394,246 A	7/1968	Goldman
3,482,057 A	12/1969	Abbott et al.
3,515,814 A	6/1970	Morgan
3,544,769 A	12/1970	Hedin



US 6,434,223 B2

Page 2

3,553,378 A	1/1971	Solomon et al.	4,191,860 A	3/1980	Weber
3,556,530 A	1/1971	Barr	4,192,972 A	3/1980	Bertoglio et al.
3,557,311 A	1/1971	Goldstein	4,194,089 A	3/1980	Hashimoto
3,568,157 A	3/1971	Downing et al.	4,200,770 A	4/1980	Hellman et al.
3,569,939 A	3/1971	Doblmaier et al.	4,201,887 A	5/1980	Burns
3,571,799 A	3/1971	Coker, Jr. et al.	4,221,933 A	9/1980	Cornell et al.
3,573,747 A	4/1971	Adams et al.	4,223,183 A	9/1980	Peters, Jr.
3,581,072 A	5/1971	Nymeyer	4,232,199 A	11/1980	Boatwright et al.
3,594,004 A	7/1971	Barr	4,241,942 A	12/1980	Bachman
3,617,638 A	11/1971	Jochimsen et al.	4,242,539 A	12/1980	Hashimoto
3,618,038 A	11/1971	Stein	4,243,844 A	1/1981	Waldman
3,624,292 A	11/1971	Guzak, Jr.	4,255,618 A	3/1981	Danner et al.
3,644,675 A	2/1972	Walton	4,255,619 A	3/1981	Saito
3,647,973 A	3/1972	James et al.	4,260,854 A	4/1981	Kolodny et al.
3,651,480 A	3/1972	Downing et al.	4,264,924 A	4/1981	Freeman
3,656,113 A	4/1972	Lince	4,264,925 A	4/1981	Freeman et al.
3,665,107 A	5/1972	Kopeck et al.	4,270,024 A	5/1981	Theis et al.
3,675,513 A	7/1972	Flanagan et al.	4,277,649 A	7/1981	Sheinbein
3,688,126 A	8/1972	Klein	4,290,141 A	9/1981	Anderson et al.
3,696,335 A	10/1972	Lemelson	4,299,637 A	11/1981	Oberdeck et al.
3,697,702 A	10/1972	Buonsante et al.	4,302,810 A	11/1981	Bouricius et al.
3,727,186 A	4/1973	Stephenson	4,303,804 A	12/1981	Johnson et al.
3,781,810 A	12/1973	Downing	4,307,266 A	12/1981	Messina
3,787,632 A	1/1974	Male et al.	4,314,103 A	2/1982	Wilson
3,792,446 A	2/1974	McFiggins et al.	4,317,961 A	3/1982	Johnson
3,794,774 A	2/1974	Kemmerly et al.	4,320,256 A	3/1982	Freeman
3,800,283 A	3/1974	Gropper	4,323,770 A	4/1982	Dieulot et al.
3,829,628 A	8/1974	Tripsas	4,328,396 A	5/1982	Theis
3,858,032 A	12/1974	Scantlin	4,338,494 A	7/1982	Theis
3,870,821 A	3/1975	Steury	4,339,798 A	7/1982	Hedges et al.
3,881,160 A	4/1975	Ross	4,345,315 A	8/1982	Cadotte et al.
3,889,050 A	6/1975	Thompson	4,348,554 A	9/1982	Aasmuth
3,909,553 A	9/1975	Marshall	4,355,207 A	10/1982	Curtin
3,912,874 A	10/1975	Botterell et al.	4,355,372 A	10/1982	Johnson et al.
3,914,747 A	10/1975	Barnes et al.	4,360,827 A	11/1982	Braun
3,918,174 A	11/1975	Miller et al.	4,360,875 A	11/1982	Behnke
3,920,908 A	11/1975	Kraus	4,371,752 A	2/1983	Matthews et al.
3,928,724 A	12/1975	Byram et al.	4,376,875 A	3/1983	Beirne
3,934,095 A	1/1976	Matthews et al.	4,389,546 A	6/1983	Glisson et al.
3,940,569 A	2/1976	Schonbrun	4,393,277 A	7/1983	Besen et al.
3,947,972 A	4/1976	Freeman	4,398,708 A	8/1983	Goldman et al.
3,950,618 A	4/1976	Bloisi	4,401,856 A	8/1983	Curtin et al.
3,974,338 A	8/1976	Luzier et al.	4,405,829 A	9/1983	Rivest et al.
3,982,103 A	9/1976	Goldman	4,420,656 A	12/1983	Freeman
3,987,252 A	10/1976	Vicari	4,427,848 A	1/1984	Tsakanikas
3,989,899 A	11/1976	Norwich	4,428,296 A	1/1984	Scheuchzer et al.
3,991,406 A	11/1976	Downing et al.	4,439,635 A	3/1984	Theis et al.
3,998,465 A	12/1976	Mascola	4,439,636 A	3/1984	Newkirk et al.
4,009,342 A	2/1977	Fahrenschon et al.	4,445,001 A	4/1984	Bertoglio
4,012,599 A	3/1977	Meyer	4,451,700 A	5/1984	Kempner et al.
4,017,835 A	4/1977	Randolph	4,468,528 A	8/1984	Reece et al.
4,024,345 A	5/1977	Kochem	4,475,189 A	10/1984	Herr et al.
4,054,756 A	10/1977	Comeella et al.	4,489,438 A	12/1984	Hughes
4,068,099 A	1/1978	Mikkola	4,490,583 A	12/1984	Bednarz et al.
4,071,198 A	1/1978	Barger, Jr. et al.	4,494,197 A	1/1985	Troy et al.
4,078,316 A	3/1978	Freeman	4,511,764 A	4/1985	Nakayama et al.
4,087,638 A	5/1978	Hayes et al.	4,517,410 A	5/1985	Williams et al.
4,088,838 A	5/1978	Nakata et al.	4,517,412 A	5/1985	Newkirk et al.
4,090,034 A	5/1978	Moylan	4,518,824 A	5/1985	Mondardini
4,090,038 A	5/1978	Biggs	4,518,827 A	5/1985	Sagara
4,108,361 A	8/1978	Krause	4,521,643 A	6/1985	Dupuis et al.
4,117,278 A	9/1978	Ehrlich et al.	4,523,055 A	6/1985	Hohl et al.
4,121,052 A	10/1978	Richard	4,532,378 A	7/1985	Nakayama et al.
4,145,578 A	3/1979	Orriss	4,539,435 A	9/1985	Eckmann
4,150,255 A	4/1979	Theis et al.	4,539,436 A	9/1985	Theis
4,152,547 A	5/1979	Theis	4,541,087 A	9/1985	Comstock
4,160,125 A	7/1979	Bower et al.	4,544,804 A	10/1985	Herr et al.
4,160,129 A	7/1979	Peyser et al.	4,547,851 A	10/1985	Kurland
4,162,377 A	7/1979	Mearns	4,549,047 A	10/1985	Brian et al.
4,187,498 A	2/1980	Creekmore	4,549,291 A	10/1985	Renoulin
4,191,376 A	3/1980	Goldman	4,555,594 A	11/1985	Friedes et al.

US 6,434,223 B2

Page 3

4,559,415 A	12/1985	Bernard et al.	4,750,199 A	6/1988	Norwich	
4,559,416 A	12/1985	Theis et al.	4,756,020 A	7/1988	Fodale	
4,562,342 A	12/1985	Solo	4,757,267 A	7/1988	Riskin	
4,565,903 A	1/1986	Riley	4,759,056 A	7/1988	Akiyama	
4,566,030 A	1/1986	Nickerson et al.	4,761,684 A	8/1988	Clark et al.	
4,567,359 A	1/1986	Lockwood	4,761,807 A	8/1988	Matthews et al.	
4,570,930 A	2/1986	Matheson	4,761,808 A	8/1988	Howard	
4,577,062 A	3/1986	Hilleary et al.	4,763,191 A	8/1988	Gordon et al.	
4,577,067 A	3/1986	Levy et al.	4,764,666 A	8/1988	Bergeron	
4,578,700 A	3/1986	Roberts et al.	4,766,604 A	8/1988	Axberg	
4,580,012 A	4/1986	Matthews et al.	4,769,834 A	9/1988	Billinger	
4,581,486 A	4/1986	Matthews et al.	4,774,655 A	9/1988	Kollin et al.	
4,582,956 A *	4/1986	Doughty	379/142	4,781,377 A	11/1988	McVean et al.
4,584,602 A	4/1986	Nakagawa	4,782,510 A	11/1988	Szlam	
4,585,903 A	4/1986	Schiller et al.	4,782,519 A	11/1988	Patel et al.	
4,585,906 A	4/1986	Matthews et al.	4,783,796 A	11/1988	Ladd	
4,586,707 A	5/1986	McNeight et al.	4,783,800 A	11/1988	Levine	
4,587,379 A	5/1986	Masuda	4,785,408 A	11/1988	Britton et al.	
4,591,190 A	5/1986	Clark	4,785,473 A	11/1988	Pfeiffer et al.	
4,591,664 A	5/1986	Freeman	4,788,682 A	11/1988	Vij et al.	
4,591,665 A	5/1986	Foster et al.	4,788,715 A	11/1988	Lee	
4,592,540 A	6/1986	Fascenda et al.	4,788,716 A	11/1988	Zebe	
4,592,546 A	6/1986	Fascenda et al.	4,788,718 A	11/1988	McNabb et al.	
4,594,476 A	6/1986	Freeman	4,789,928 A	12/1988	Fujisaki	
4,598,367 A	7/1986	DeFrancesco et al.	4,791,664 A	12/1988	Lutz et al.	
4,599,493 A	7/1986	Ellis Cave	4,791,666 A	12/1988	Cobb et al.	
4,600,809 A	7/1986	Tatsumi et al.	4,792,968 A	12/1988	Katz	
4,603,232 A	7/1986	Kurland et al.	4,796,293 A	1/1989	Blinken et al.	
4,611,094 A	9/1986	Asmuth et al.	4,797,818 A	1/1989	Cotter	
4,611,906 A	9/1986	Asmuth et al.	4,797,910 A	1/1989	Daudelin	
4,614,367 A	9/1986	Breen	4,797,911 A	1/1989	Szlam et al.	
4,625,079 A	11/1986	Castro et al.	4,797,913 A	1/1989	Kaplan	
4,625,081 A	11/1986	Lotito et al.	4,799,156 A	1/1989	Shavit et al.	
4,625,276 A	11/1986	Benton et al.	4,799,255 A	1/1989	Billinger et al.	
4,630,200 A	12/1986	Ohmae et al.	4,800,583 A	1/1989	Theis	
4,630,201 A	12/1986	White	4,805,207 A	2/1989	McNutt et al.	
4,634,809 A	1/1987	Paulsson et al.	4,805,209 A	2/1989	Baker, Jr. et al.	
4,635,251 A	1/1987	Stanley et al.	4,812,843 A	3/1989	Champion, III et al.	
4,640,991 A	2/1987	Matthews et al.	4,815,031 A	3/1989	Furukawa	
4,645,873 A	2/1987	Chomet	4,815,121 A	3/1989	Yoshida	
4,649,563 A	3/1987	Riskin	4,815,741 A	3/1989	Small	
4,652,998 A	3/1987	Koza et al.	4,827,500 A	5/1989	Binkerd et al.	
4,654,482 A	3/1987	DeAngelis	4,829,563 A	5/1989	Crockett et al.	
4,658,417 A	4/1987	Hashimoto et al.	4,832,341 A	5/1989	Muller	
4,663,777 A	5/1987	Szeto	4,835,630 A	5/1989	Freer	
4,665,502 A	5/1987	Kreisner	4,842,278 A	6/1989	Markowicz	
4,669,730 A	6/1987	Small	4,845,739 A	7/1989	Katz	
4,671,512 A	6/1987	Bachman et al.	4,847,890 A	7/1989	Solomon et al.	
4,672,660 A	6/1987	Curtin	4,850,007 A	7/1989	Marino et al.	
4,674,044 A	6/1987	Kalmus et al.	4,852,154 A	7/1989	Lewis et al.	
4,677,552 A	6/1987	Sibley, Jr.	4,853,882 A	8/1989	Marshall	
4,677,553 A	6/1987	Roberts et al.	4,856,050 A	8/1989	Theis et al.	
4,685,123 A	8/1987	Hsia et al.	4,856,066 A	8/1989	Lemelson	
4,685,127 A	8/1987	Miller et al.	4,866,756 A	9/1989	Crane et al.	
4,688,170 A	8/1987	Waite et al.	4,876,592 A	10/1989	Von Kohorn	
4,689,742 A	8/1987	Troy et al.	4,876,717 A	10/1989	Barron et al.	
4,692,817 A	9/1987	Theis	4,878,240 A	10/1989	Lin et al.	
4,694,490 A	9/1987	Harvey et al.	4,881,261 A	11/1989	Oliphant et al.	
4,696,028 A	9/1987	Morganstein et al.	4,882,473 A	11/1989	Bergeron et al.	
4,696,029 A	9/1987	Cohen	4,893,325 A	1/1990	Pankonen et al.	
4,697,282 A	9/1987	Winter et al.	4,893,328 A	1/1990	Peacock	
4,704,725 A	11/1987	Harvey et al.	4,893,330 A	1/1990	Franco	
4,706,275 A	11/1987	Kamil	4,894,857 A	1/1990	Szlam et al.	
4,710,955 A	12/1987	Kauffman	4,896,345 A	1/1990	Thorne	
4,715,061 A	12/1987	Norwich	4,896,346 A	1/1990	Belfield et al.	
4,716,583 A	12/1987	Groner et al.	4,897,867 A	1/1990	Foster et al.	
4,719,647 A	1/1988	Theis et al.	4,899,373 A	2/1990	Lee et al.	
4,722,526 A	2/1988	Tovar et al.	4,899,375 A	2/1990	Bauer et al.	
4,745,468 A	5/1988	Von Kohorn	4,907,079 A	3/1990	Turner et al.	
4,747,124 A	5/1988	Ladd	4,908,761 A	3/1990	Tai	
4,748,668 A	5/1988	Shamir et al.	4,908,850 A *	3/1990	Masson et al.	
					379/88	

US 6,434,223 B2

Page 4

4,908,852 A	3/1990	Hird et al.	5,351,285 A	9/1994	Katz	
4,916,726 A	4/1990	Morley, Jr. et al.	5,353,335 A	10/1994	D'Urso et al.	
4,922,519 A	5/1990	Daudelin	5,354,069 A	10/1994	Guttman et al.	
4,922,520 A	5/1990	Bernard et al.	5,361,295 A	11/1994	Solomon et al.	
4,922,522 A *	5/1990	Scanlon	379/93.13	5,369,685 A	11/1994	Kero
4,926,462 A	5/1990	Ladd et al.	5,403,999 A	4/1995	Entenmann et al.	
4,932,021 A	6/1990	Moody	5,415,416 A	5/1995	Scagnelli et al.	
4,933,965 A	6/1990	Hird	5,416,830 A	5/1995	MacMillan, Jr. et al.	
4,937,853 A	6/1990	Brule et al.	5,418,844 A	5/1995	Morrisey et al.	
4,942,598 A	7/1990	Davis	5,475,205 A	12/1995	Behm et al.	
4,942,599 A	7/1990	Gordon et al.	5,490,207 A	2/1996	Schorr	
4,942,616 A	7/1990	Linstroth et al.	5,511,112 A	4/1996	Szlam	
4,943,995 A	7/1990	Dandelin et al.	5,537,143 A	7/1996	Steingold et al.	
4,951,307 A	8/1990	Willard	5,561,710 A	10/1996	Helms	
4,955,047 A	9/1990	Morganstein et al.	5,599,046 A	2/1997	Behm et al.	
4,959,783 A *	9/1990	Scott et al.	379/93.13	5,623,536 A	4/1997	Solomon et al.
4,959,855 A	9/1990	Daudelin	5,651,048 A	7/1997	Leeuw	
4,961,217 A	10/1990	Akiyama	5,709,603 A	1/1998	Kaye	
4,964,157 A	10/1990	Aoshima	5,768,348 A	6/1998	Solomon et al.	
4,965,825 A	10/1990	Harvey et al.	5,787,156 A	7/1998	Katz	
4,969,183 A *	11/1990	Reese	379/93.13	5,790,636 A	8/1998	Marshall
4,969,185 A	11/1990	Dorst et al.	5,815,551 A	9/1998	Katz	
4,972,461 A	11/1990	Brown et al.	5,835,576 A	11/1998	Katz	
4,974,252 A	11/1990	Osborne				
4,975,945 A	12/1990	Carbullido				

FOREIGN PATENT DOCUMENTS

4,989,233 A	1/1991	Schakowsky et al.	AU	66113/81	7/1981	
4,989,234 A	1/1991	Schakowsky et al.	CA	1022674	12/1977	
4,992,940 A	2/1991	Dworkin	CA	1025118	1/1978	
4,996,705 A *	2/1991	Entenmann et al.	379/93.13	CA	1056500	6/1979
5,000,486 A	3/1991	Rua, Jr. et al.	CA	1059621	7/1979	
5,001,710 A	3/1991	Gawrys et al.	CA	1162336	2/1984	
5,003,574 A	3/1991	Dend et al.	CA	1225759	8/1987	
5,003,595 A	3/1991	Collins et al.	CA	2009937-2	8/1990	
5,014,298 A	5/1991	Katz	DE	OS 2929416	2/1981	
5,017,917 A	5/1991	Fisher et al.	DE	32 25 562	1/1984	
5,018,736 A	5/1991	Pearson et al.	DE	OS 3726366	2/1988	
5,023,904 A	6/1991	Kaplan et al.	DE	4005365 A1	8/1990	
5,033,076 A	7/1991	Jones et al.	EP	0 120 322	2/1984	
5,033,088 A	7/1991	Shipman	EP	0 120 322	3/1984	
5,036,535 A	7/1991	Gechter et al.	EP	0 217 308 A2	4/1987	
5,046,183 A	9/1991	Dorst et al.	EP	0 229 170 A	7/1987	
5,054,059 A	10/1991	Stern et al.	EP	0249575	12/1987	
5,083,272 A	1/1992	Walker et al.	EP	0 249 795	12/1987	
5,097,528 A	3/1992	Gursahaney et al.	EP	0295837	12/1988	
5,109,414 A	4/1992	Harvey et al.	EP	0342395	11/1989	
5,125,024 A	6/1992	Gokcen et al.	EP	0434181	6/1991	
5,127,003 A	6/1992	Doll, Jr. et al.	EP	0 451 685 A2	10/1991	
5,128,984 A *	7/1992	Katz	379/93.13	EP	0 451693 A2	10/1991
5,146,491 A	9/1992	Silver et al.	EP	0 453 831 A2	10/1991	
5,148,474 A	9/1992	Haralambopoulos et al.	EP	0 454 363 A2	10/1991	
5,164,981 A	11/1992	Mitchell et al.	EP	0 568 114 A2	11/1993	
5,168,548 A	12/1992	Kaufman et al.	EP	0 568 114 A	11/1993	
5,179,585 A	1/1993	MacMillan, Jr. et al.	EP	0 229 170 B1	2/1994	
5,181,236 A	1/1993	LaVallee et al.	EP	0 620 669 A1	10/1994	
5,181,238 A	1/1993	Medamana et al.	EP	0 620 669 A	10/1994	
5,186,471 A	2/1993	Vancraeynest	EP	0 342 295 B1	3/1995	
5,199,062 A	3/1993	Von Meister et al.	EP	0 438 860 B1	9/1996	
5,214,689 A	5/1993	O'Sullivan	EP	0 382 670 B1	4/1997	
5,222,120 A	6/1993	McLeod et al.	EP	0 382 212 B1	7/1998	
5,233,654 A	8/1993	Harvey et al.	EP	0 917 335 A2	5/1999	
5,236,199 A	8/1993	Thompson, Jr.	FR	2 575 016	7/1986	
5,255,183 A	10/1993	Katz	FR	9002131	8/1990	
5,263,723 A	11/1993	Pearson et al.	GB	1162484	4/1967	
5,289,531 A	2/1994	Levine	GB	2184327 A	6/1987	
5,299,260 A	3/1994	Shiao	GB	2 230 403 A	10/1990	
5,303,298 A	4/1994	Morganstein	GB	2 252 270 B	8/1992	
5,303,299 A	4/1994	Hunt et al.	GB	2253542	9/1992	
5,327,554 A	7/1994	Palazzi, III et al.	GB	2 230 403 B	7/1993	
5,333,185 A	7/1994	Burke et al.	JP	52-17739	2/1977	
5,335,277 A	8/1994	Harvey et al.	JP	52-17740	9/1977	
5,351,276 A	9/1994	Doll, Jr. et al.	JP	54-62708	5/1979	

US 6,434,223 B2

Page 5

JP	56-152365	11/1981
JP	59-83270	5/1984
JP	62-92654	4/1987
JP	62-98848	5/1987
JP	62-239757	10/1987
JP	500138/88	1/1988
JP	009353/1988	1/1988
JP	63-114442	5/1988
JP	246067/1988	10/1988
JP	117436/1989	5/1989
JP	298158/90	12/1990
JP	41855/91	2/1991
WO	WO 82/02132	6/1982
WO	00370/87	1/1987
WO	WO87/00375	1/1987
WO	WO 87/00375	1/1987
WO	WO88/02966	4/1988
WO	WO88/05985	8/1988
WO	WO89/02139	3/1989
WO	WO89/09530	10/1989
WO	WO 89/11768	11/1989
WO	WO 90/10989	9/1990
WO	WO 90/11661	10/1990
WO	WO 91/15818	10/1991
WO	WO 92/06548	4/1992
WO	WO 92/09164	5/1992
WO	WO 92/15166	9/1992
WO	WO93/05483	3/1993

OTHER PUBLICATIONS

"The AT&T Multi-Mode Voice Systems—Full Spectrum Solutions . . ." by Hester et al., Sep. 1985.*

"Network Communications Applications and Services," AT&T Communications Consultant Liaison Program, Issue 1, Jun. 1984.

Brady, R.L., et al., "Telephone Identifier Interface", *IBM Technical Disclosure Bulletin*, Oct. 1976, vol. 19, No. 5, pp. 1569–1571—(Article).

Mullen, R.W., "Telephone—home's 'friendliest' Computer", *Inside Telephone Engineer And Management*, May 15, 1985, vol. 89, No. 10,—(Article).

Winckelmann, W.A., "Automatic Intercept Service", *Bell Laboratories Record*, May 1968, vol. 46, No. 5, pp. 138–143—(Article).

Hester, S.D., et al., "The AT&T Multi-Mode Voice Systems—Full Spectrum Solutions For Speech Processing Applications", Sep. 1985, pp. 1–10—(Proceedings Of The 1985 AVIOS Conference).

Moosemiller, J.P., "AT&T's CONVERSANT™ I Voice System" *Speech Technology*, Mar./Apr. 1986, pp. 88–93—(Article).

Frank, R.J., et al., "No. 4 ESS: Mass Announcement Capability", *The Bell System Technical Journal*, Jul./Aug. 1981, vol. 60, No. 6, Part 2, pp. 1049–1081—(Chapter from a Book).

"Chapter I General Description" *D.I.A.L. PRM/Release 3—Version 2* Mar. 1987 (Product Reference Manual).

Perdue, R.J., et al., "Conversant 1 Voice System: Architecture and Applications", *AT&T Technical Journal*, Sep./Oct. 1986—(Article).

Ozawa, Y., et al., "Voice Response System and Its Applications", *Hitachi Review*, Dec. 1979, vol. 28, No. 6, pp. 301–305—(Article).

Brochures (TWA Crew Scheduling/PSA's Reservation System/Universal Studios Program/Dow Phone): "AVIAR The communication system that keeps you flying", *VoiceMail Int'l*,—(Brochure) "TWA VOICEMAIL, Flight Attendants Users Guide" Aug. 1986,—(Brochure) Holtzman, Henry, "Voice Mail Soars At TWA", *Modern Office Technology* (Reprint), Mar. 1986,—(Article) "Bid Results via VOICEMAIL—Flight Deck Crew Members", May 1, 1985 (Script) Borden, W.S., "Flight Attendant Self Input Of Monthly Bids Via Touch Tone Telephone", *In-Flight Services Bulletin*, Sep. 15, 1985—(Memo) "Look Ma, no operators! Automatic voice system does many airline jobs", *Air Transport World*, Oct. 1986—(Article) "1,000,000 Shares Common Stock" *Voicemail International, Inc.*, Jan. 10, 1984—(Public Offering Summary).

Brochures (TWA Crew Scheduling/PSA's Reservation System/Universal Studios Program/Dow Phone): Levinson, S.E., et al., "A Conversational-Mode Airline Information and Reservation System Using Speech Input and Output", *The Bell System Technical Journal*, Jan. 1980, vol. 59, No. 1, pp. 1, pp. 119–137—(Chapter from a Book).

Corbett, A.J., "Telephone Enquiry System Using Synthetic Speech", *University of Essex*, Dec. 1984, (Thesis).

Sagawa, S., et al., "Automatic Seat Reservation By Touch-Tone Telephone", *Second USA Japan Computer Conference*, 1975, vol. 2, pp. 290–294—(Article).

Cox, Jr., Floyd, "Flora Fax", Jan. 22, 1986—(Letter and Advertisements).

Moslow, Jim, "Emergency reporting system for small communities", *Telephony*, Feb. 11, 1985, pp. 30–32, 34—(Article).

Press Release: "AT&T 2: Reaches Agreement with Rockwell (ROK)," Aug. 26, 1986.

Adams, Cynthia, "Conversing With Computers", *Computerworld on Communications*, May 18, 1983, vol. 17, No. 20A, pp. 36–44—(Article).

Advertisement: Cuervo Gold Beach Chair, *VoiceMail Int'l*, '83.

Emerson, S.T., "Voice Response Systems—Technology to the Rescue for Business Users", *Speech Technology*, Jan./Feb. '93, pp. 99–103—(Article).

Martin, James, "Design of Man-Computer Dialogues", *IBM System Research Institute*, Chapter 16, pp. 283–306—(Chapter from a Book).

Kaiserman, D.B., "The Role Of Audio Response In Data Collection Systems", *Proceedings of the Technical Sessions*, Paleis des Expositions, Geneva, Switzerland, Jun. 17–19, 1980, pp. 247–251—(Article).

A.J. Waite, "Getting Personal With New Technologies For Telemarketers," *DM News*, Feb. 15, 1987, p. 50 on.

Yoshizawa, K., et al., "Voice Response System for Telephone Betting", *Hitachi Review*, Jun. 1977, vol. 26, No. 6—(Article).

Inquiry Letter To The F.C.C., From Attorneys For the Prior Title Holder Seeking Rulings That A Particular Game Would Not Be Considered A Lottery Under F.C.C. Regulations (Exhibit A).

Reply Letter From The F.C.C. To The Inquiry Letter Stating The Requested Rulings (Exhibit B).

Basinger, R. G., et al., "Calling Card Service—Overall Description and Operational Characteristics", *The Bell System Technical Journal*, Sep., 1982.

US 6,434,223 B2

Page 6

- Confalone, D. E., et al, "Calling Card Service—TSPS Hardware, Software, and Signaling Implementation", *The Bell System Technical Journal*, Sep., 1982.
- Eigen, D.J., et al., "Calling Card Service—Human Factors Studies", *The Bell Technical Journal*, Sep., 1982.
- Lexis Search, Nov. 1, 1984, re: System 85 Computer Process.
- Lexis Search, Jan. 28, 1985, re: ROLM Releases Four-Channel Phonemail Voice Message Unit.
- Lexis Search Results (Great American Potato-Chip give-away/Raisin Bran Game/Giants Baseball Trivia—Dial Info): "In The Chips" *AdWeek*, Jul. 22, 1985.
- "San-Fran-Police-League", *Business Wire*, Aug. 2, 1985.
- "Similar Campaigns", *DM News*, Dec. 15, 1985.
- "Phone Offers Action At Push Of Button", *Advertising Age*, Feb. 6, 1986.
- Boies, Stephen J., "A Computer Based Audio Communication System", *Computer Sciences Department*, Thomas J. Watson Research Center, Yorktown Heights, New York, USA, pp. 701-704—(Article) (Undated).
- Winckelmann, W.A., "Automatic Intercept Service", *Bell Laboratories Record*, May 1968, vol. 46, No. 5, pp. 138-143—(Article) *.
- "Proposed Agreement Between National Enterprises Board (N.E.B.) and Delphi", Jan. 30, 1979.
- Voysey, Hedley, "Nexos wins rights to comms engine", *Computing*, Sep. 6, ??, vol. 7, No. 36—(Article).
- "Appraisal Of The Fair Market Value Of Delphi Communications", Apr. 30, 1980—(Study) Delphi Communications—(Charts and Exhibits).
- "Voice-Response System Improves Order Entry, Inventory Control", *Communications News*, Aug. 1976—(Article).
- "Periphonics VOICEPACK"—(Brochure) (Undated).
- "The Voice Response Peripheral That Turns Every Touch-Tone Telephone Into A Computer Terminal", Periphonics Corporation—(Brochure) (Undated).
- Rabin, Jeff, "Minorities Seek 30% Share of All Lottery Operations", *Sacramento Bee*, Apr. 12, 1985—(Article).
- Advertisements (Dial Giants Baseball Trivia Game): *San Francisco Chronicle*, Jul. 3, 1984.
- Curtis, Cathy, "976 numbers let you dial-a-whatever", *San Francisco Business Journal*, Nov. 26, 1984—(Article).
- Ferrell, Jane, "Three little numbers for instant information", *San Francisco Chronicle*, Aug. 15, 1984—(Article).
- "Dallas Telephone Call-In Game Uses Computer Voice Interface", Sep. 24, 1984—(Press Release).
- Rivest, R.L., et al., "A Method for Obtaining Digital Signatures and Public-Key Cryptosystems", *Communications of the ACM*, Feb. 1978, vol. 21, No. 2, pp. 120-126—(Article).
- Finnigan, Paul F, "Audiotex: The telephone as data-access equipment", *Data Communications*, 1987, pp. 155-161 (Article).
- Ozawa, Y., et al., "Voice Response System and Its Applications", *Hitachi Review*, Dec. 1979, vol. 28, No. 6, pp. 301-305—(Article) *.
- "AT&T 2: Reaches agreement with Rockwell (ROK)", Aug. 26, 1986—(Press Release) *. "AT&T: Expands Computer speech system product line", Apr. 14, 1986—(Press Release).
- Adams, Cynthia, "Conversing With Computers", *Computerworld on Communications*, May 18, 1983, vol. 17, No. 20A, pp. 36-44—(Article) *.
- Davidson, Leon, "A Pushbutton Telephone For Alphanumeric Input", *Datamation*, Apr. 1966, pp. 27-30—(Article). Advertisement: Cuervo Gold Beach Chair, VoiceMail Int'l, '83 *.
- "Digital's All-In-1 Voice Messaging", *Digital*—(Brochure) (Undated).
- "Access Voice and Mail Messages From One Familiar Source", *Insight*,—(Article) (Undated).
- "Get The Message . . . !" "New VoiceMail Features", *VoiceMail International, Inc.*, Oct. 1984—(Article).
- Brochures (TWA Crew Scheduling/PSA's Reservation System/Universal Studios Program/Dow Phone): "AVIAR The communication system that keeps you flying", *VoiceMail Int'l*,—(Brochure) (Undated) *.
- "TWA VOICEMAIL, Flight Attendants Users Guide" Aug. 1986,—(Brochure) *.
- Holtzman, Henry, "Voice Mail Soars At TWA", *Modern Office Technology* (Reprint), Mar. 1986,—(Article) *.
- "Bid Results via VOICEMAIL—Flight Deck Crew Members", May 1, 1985 (Script) *.
- Borden, W.S., "Flight Attendant Self Input Of Monthly Bids Via Touch Tone Telephone", *In-Flight Services Bulletin*, Sep. 15, 1985—(Memo) *.
- "Look Ma, no operators! Automatic voice system does many airline jobs", *Air Transport World*, Oct. 1986—(Article) *.
- "1,000,000 Shares Common Stock" *VoiceMail International, Inc.*, Jan. 10, 1984—(Public Offering Summary) *.
- Levinson, S.E., et al., "A Conversational-Mode Airline Information and Reservation System Using Speech Input and Output", *The Bell System Technical Journal*, Jan. 1980, vol. 59, No. 1, pp. 119-137 *.
- Emerson, S.T., "Voice Response Systems—Technology to the Rescue for Business Users", *Speech Technology*, Jan./Feb. '83, pp. 99-103—(Article) *.
- Moslow, Jim, "Emergency reporting system for small communities", *Telephony*, Feb. 11, 1985, pp. 30-32, 34—(Article) *.
- Rabiner, L.R., et al., "Digital Techniques for Computer Voice Response: Implementation and Applications", *Proceedings Of The IEEE*, Apr. 1976, vol. 64, No. 4, pp. 416-432—(Article).
- Moosemiller, J.P., "AT&T's CONVERSANT™ I Voice System" *Speech Technology*, Mar./Apr. 1986, pp. 88-93—(Article) *.
- Frank, R.J., et al., "No. 4 ESS: Mass Announcement Capability", *The Bell System Technical Journal*, Jul./Aug. 1981, vol. 60, No. 6, Part 2, pp. 1049-1081—(Chapter from a Book) *.
- "Chapter I General Description" *D.I.A.L. PRM/Release 3—Version 2* Mar. 1987 (Product Reference Manual) *.
- "Announcing Release 3.3" *D-A-S-H-D.I.A.L. Application and Support Hints*, Jan./Feb. Mar. 1987, vol. 3, No. 1—(Brochure).
- "D.I.A.L. Software Relase 4", *OPCOM*, Jan. 1988, Version 1—(Product Reference Manual).
- Brady, R.L., et al., "Telephone Identifier Interface", *IBM Technical Disclosure Bulletin*, Oct. 1976, vol. 19, No. 5, pp. 1569-1571—(Article) *.
- Corbett, A.J., "Telephone Enquiry System Using Synthetic Speech", *University of Essex*, Dec. 1974, (Thesis) *.
- Yoshizawa, K., et al., "Voice Response System for Telephone Betting", *Hitachi Review*, Jun. 1977, vol. 26, No. 6—(Article) *.

US 6,434,223 B2

Page 7

- Sagawa, S., et al., "Automatic Seat Reservation By Touch-Tone Telephone", *Second USA Japan Computer Conference*, 1975, vol. 2, pp. 290-294—(Article) *.
- Smith, S.L., "Computer-Generated Speech and Man-Computer Interaction", *Human Factors*, 1970, 12(2), pp. 215-223—(Article).
- Newhouse, A., et al., "On The Use Of Very Low Cost Terminals", *University of Houston*, pp. 240-249—(Paper) (Undated).
- Mullen, R.W., "Telephone—home's 'friendliest' Computer", *Inside Telephone Engineer And Management*, May 15, 1985, vol. 89, No. 10,—(Article) *.
- Kutler, Jeffrey, "Technology, System Sharing Improve Phone Banking Outlook", *American Banker*, Dec. 7, 1979, vol. CXLIV, No. 237—(Article).
- Kutler, Jeffrey, "Phone Bill Paying Accessed By Pioneer", *American Banker*, Dec. 7, 1979, vol. CXLIV, No. 237—(Article).
- "User's Guide", *Dowphone* (Undated).
- "Audiotex Information From Dow Jones", *The Computer Review*, Nov. 1984, vol. 2, No. 1—(Article).
- "Dow Phone Adds Innovest Systems' Technical Analysis Reports" *IDP Report*, Jan. 3, 1986—(Report).
- Perdue, R.J., et al., "Conversant 1 Voice System: Architecture and Applications", *AT&T Technical Journal*, Sep./Oct. 1986—(Article) *.
- Martin, James, "Design of Man-Computer Dialogues", *IBM System Research Institute*, Chapter 16, pp. 283-306—(Chapter from a Book) (Undated) *.
- Kaiserman, D.B., "The Role Of Audio Response In Data Collection Systems", *Proceedings of the Technical Sessions*, Paleis des Expositions, Geneva, Switzerland, Jun. 17-19, 1980, pp. 247-251—(Article) *.
- Boies, S.J., et al., "User Interface for Audio Communication System", *IBM Technical Disclosure Bulletin*, Dec. 1982, vol. 25, No. 7A, pp. 3371-337—(Article).
- Kramer, J.J., "Human Factors Problems in the Use of Pushbutton Telephones for Data Entry", *Bell Telephone Laboratories*, Holmdel, N.J., Apr. 74, pp. 241-258—(Paper).
- Cox, Jr., Floyd, "Flora Fax", Jan. 22, 1986—(Letter and Advertisements) *.
- Isayama, Tetsuya, "Automatic Response Processing Equipment as a Multi-media Communication Node", *Japan Telecommunications Review*, 1987, vol. 29, No. 1, pp. 29-36—(Article).
- Imai, Y., et al., "Shared Audio Information System Using New Audio Response Unit" *Japan Telecommunications Review*, Oct. 1981, vol. 23, No. 4, pp. 383-390—(Article).
- "Distrust of computer kills home service plan" (date and source missing).
- "Automatic Call Distributor/Management Information System: Interface between 1/1AESSTTM Switch Central Office and Customer Premises Equipment", *Bell Communications Research*, Dec. 1986, Technical Reference TR-TSY-000306, Issue 1—(Article).
- "Comparison Of ACD Systems", *Connection*, Feb. 1990—(Chart).
- "ACD Comparison", *Aspect*, Feb. 2, 1990—(Final Report).
- Lanzeter, Ygal, "Automatic Number Identification System For Step-By-Step Exchanges", *The Ninth Convention of Electrical and Electronics Engineers In Israel*, Apr. 1975—(Paper).
- Flanagan, J.L., et al., "Speech Synthesis", Chapters 1, 39, 42, 45 and 46—(Chapter from a Book).
- "Bell Atlantic's Bolger Wants To Be Free", *Telephony*, Jul. 14, 1986—(Article).
- "Advanced New Cable TV Technology Developed For Impulse-Pay-Per-View", Jun. 3, 1985—(Search).
- Noll, M.A., "Introduction to Telephones & Telephone Systems", Second Edition, Chapter 9—(Chapter from a Book).
- "Proposal for Kome Mediavoice Interactive Phone/Database Marketing System", "Mediavoice Startup Software Package For Kome" "Optional Mediavoice Software Packages For Kome" "Why ATI Mediavoice Is The Choice For Success"—(Proposal).
- Meade, Jim, Dec., 29, 1992—(Letter).
- "All About Voice Response", *Datapro Research Corporation*, Delran, N.J., Mar. 1972 and Sep. 1974—(Article).
- "Voice Response in Banking Applications", *Datapro Research Corporation*, Delran, N.J., Oct. 1974 and Feb. 1983—(Article).
- Schiller, T.R., "Field Craft Technician Communication With A Host Computer Synthesized Voice", *Proceedings AVIOS '86 Voice I/O Systems Applications Conference*, Sep. 16-18, 1986 Rabin, Richard, "Telephone Access Applications: The Growth Market For Voice Processing", *Proceedings AVIOS '86 Voice I/O Systems Applications Conference*, Oct. 6-8, 1987 Schuster, E.R., "B.R.U.T.U.S. Better Registration Using Touch-Tone phones for University Students", *Proceedings AVIOS '86 Voice I/O Systems Applications Conference*, Oct. 4-6, 1988.
- "Exxon3 s Next Prey. IBM and XEROX", *BusinessWeek*, Apr. 28, 1980, pp. 92-96 and 103—(Article).
- Weinstein, S.B., "Emerging Telecommunications Needs of the Card Industry", *IEEE Communications Magazine*, Jul. 1984, vol. 22, No. 7, pp 26-31—(Article).
- "Riding Gain", *Broadcasting*, Mar. 7, 1983—(Article).
- Pickup, Mike, "Bank from home, by screen or by phone", *Building Society Gazette*, Jul. 1988—(Article).
- Pickup, Mike, "Voice Response", *Computer Systems*, Sep. 1986—(Article).
- Rabiner, L.R., et al., "Isolated and Connected Word Recognition—Theory and Selected Applications", *IEEE Transaction Communications*, May 1981, Com. 29, No. 5, pp. 621, 622, 633, 644-646, 655-659—(Article).
- Takahashi, K., et al., "The Audio Response System for Telephone Reservation", *U.D.C. Oka, Y., et al., Development of Ventilating Equipment for Shinkansen Train*, U.D.C.—(Articles in Japanese).
- Pagones, M.J., et al., "New services follow increased digitization on the long-haul transmission network", *AT&T Bell Laboratories Record*, 1983, vol. 61, pp. 25-33—(Article).
- "New phone service tells customer who's calling", *Bell Laboratories Record*, 1984, vol. 62, p. 9—(Article).
- Hirschman, C.B., et al., "LASS: Putting the telephone customer in charge", *Bell Laboratories Record*, 1985, vol. 63, pp. 10-16—(Article).
- "AT&T building communications network for Defense Department" and "AT&T inaugurates pay-per-view TV", *Bell Laboratories Record*, 1986, vol. 64, p. 2—(Article).
- "Power To . . .", *Dialogic Corporation*, Littleton Road,—(unidentifiable Article).

US 6,434,223 B2

Page 8

- "Representative Customer List For Interface Technology's Total Entry System", "Toes Solutions—Pharmaceutical Manufacturer", "The Voice Response Solution For Answering Customer/Sales Calls", "Toes Solutions—Orthopedic Equipment" and "Toes Solutions —Convenience Store"—(Articles).
- Lummis, R.C., "Speaker Verification: A Step Toward the "Checkless" Society", *Bell Laboratories Record*, pp. 254–259—(Article).
- Flanagan, J.L., et al., "Synthetic voices for computers", *IEEE Spectrum*, Oct. 1970, vol. 7, No. 10, pp. 22–45—(Article).
- Rabiner, L.R., et al., "Computer Synthesis of Speech by Concatenation of Formant-Coded Words", *The Bell System Technical Journal*, May/Jun. 1971, pp. 1541–1558—(Chapter from a Book).
- Flanagan, J.L., et al., "Wiring Telephone Apparatus from Computer-Generated Speech", *The Bell System Technical Journal*, Feb. 1972, pp. 391–397—(Chapter from a Book).
- Hornsby, Jr., Thomas G., "Voice Response Systems", *Modern Data*, Nov. 1972, pp. 46–50—(Article).
- Diffie, W., et al., "New Directions in Cryptography", *IEEE Transactions On Information Theory*, Nov. 1976, vol. IT-22, No. 6, pp. 644–654—(Article).
- Rosenthal, L.H., et al., "Automatic voice response: interfacing man with machine", *IEEE Spectrum*, Jul. 1974, vol. 11, No. 7—(Article).
- Rosenthal, L.H., et al., "A Multiline Computer Voice Response System Utilizing ADPCM Coded Speech", *IEEE Transactions on Acoustics, Speech, and Signal Processing*, Oct. 1974, vol. ASSP-22, No. 5, pp. 339–352—(Article).
- Flanagan, James L., "Computers that Talk and Listen: Man-Machine Communication by Voice", *Proceedings for the IEEE*, Apr. 1976, vol. 64, No. 4, pp. 405–415—(Article).
- Maisel, Ivan, "To Put Your Baseball Savvy On The Line, Pick Up The Phone And Call", *Sports Illustrated*, Sep. 3, 1984—(Script)
- Brown, Merrill, "Hollywood Saga: Who Bought J.R.?", *The Washington Post*, Final Edition, Oct. 14, 1984—(Script)
- "SPECIAL-OLYMPICS; Teams with baseball trivia expert Brad Curtis", *Business Wire*, Sep. 30, 1985—(Script).
- Lucas, W.A., et al., "The Spartanburg Interactive Cable Experiments In Home Education", *Rand Corp.*, U.S. Department of Commerce, National Technical Information Service, Feb., 1979—(Publication).
- Martin, James, "Viewdata And The Information Society",—(Book).
- Gawrys, G.W., "Ushering In The Era Of ISDN", *AT&T Technology*, 1986, vol. 1, No. 1, pp. 2–9—(Article).
- Cummings, J.L., et al., "AT&T Network Architecture Evolution", *AT&T Technical Journal*, May/Jun. 1987, vol. 66, Issue 3, pp. 2–12—(Article).
- Yates, C.E., "Telemarketing And Technology: Perfect Business Partners", *AT&T Technology*, 1987, vol. 1, No. 3, pp. 48–55—(Article)⁴.
- Herr, T.J., "ISDN Applications In Public Switched Networks", *AT&T Technology*, 1987, vol. 2, No. 3, pp. 56–65—(Article).
- "Only the best. Only from Florafax", *Florafax*—(Advertisement).
- Aldefeld, B., et al., "Automated Directory Listing Retrieval System Based on Isolated Word Recognition", *Proceedings of the IEEE*, Nov. 1980, vol. 68, No. 11, pp. 1364–1379—(Article).
- Rabiner, L.R., et al., "On the Application of Embedded Training to Connected Letter Recognition for Directory Listing Retrieval", *AT&T Bell Laboratories Technical Journal*, Mar. 1984, vol. 63, No. 3, pp. 459–477—(Chapter from a Book).
- Rosenberg, A.E., et al., "Recognition of Spoken Spelled Names for Directory Assistance Using Speaker-Independent Templates", *The Bell System Technical Journal*, Apr. 1980, vol. 59, No. 4, pp. 571–592—(Chapter from a Book).
- "The Voicestar Series By Periphonics", *Periphonics*, Jan. 1986—(Publication)
- "Bank-From-Home system by Periphonics Corporation" "Bill Payment Success Story", *Periphonics Corporation* "A History of Imagination", *Periphonics* "Banking Success Story", *Periphonics Corporation* "Data-Voice and the PDT II", *Periphonics Corporation* "Banking Success Story", *Periphonics Corporation*—(Brochures).
- Schulman, Roger, "TeleLearning: The Computer Brings the Classroom Home", *Family Computing*, Sep. 1984, pp. 50–53—(Article).
- "ICS launches new ?-home interactive video service package", *Cable Vision*, Sep. 3, 1984, pp. 71/73—(Article).
- "The Remarketing of Prestel", *Which Computer?*, Aug. 1984, pp. 106, 107 and ?—(Article).
- "Four-Line TeleClerk Calls, Answers, Stores, Surveys", *Hardcopy*, Jan. 1985, vol. 14, No. 1—(Article).
- "Peripheral Speaks On Phone", *Hardcopy*, Dec. 1984—(Article).
- Page from *What's new in Computing*, Apr. 1985—(Article).
- Page from *Today*, A Compuserve Publication, Jun. 1985—(Article).
- Page from *Computer Communications*, Feb. 1984, vol. 7, No. 1—(Article).
- Gits, Victoria, "Interactive device doesn't interrupt telephone calls", *Cable Vision*, Jun. 17, 1985, p. 20—(Article).
- Cuiwik, Tony, "Reach Out & Touch The Unix System", *Unix Review*, Jun. 1985, pp. 50, 52, 53, 56—(Article).
- Blackwell, Gerry, "Dial-a-Quote: first Canadian commercial audiotex service", *Computing Canada*—(Article).
- Applebaum, Simon, "Two-way television" *Cable Vision*, Aug. 8, 1983, p. 66—(Article).
- Sw??ne, Michael, "Fiber-optic TV network lets viewers talk back", *Info World*—(Article).
- Morrill, C.S., et al., "User Input Mode and Computer-Aided Instruction", *Human Factors*, 1968, 10(3), pp. 225–232—(Chapter from a Book).
- Results of Lexis Search Request for "Dial Info or Dialinfo", Date of Search Apr. 13, 1992, pp. 1–38.
- Results of Lexis Search Request for "Phone Programs or International Information Network", Date of Search Apr. 15, 1992, pp. 1–35.
- Van Giesen, Jr. W.D., et al., "Machine-Generated Speech For Use With Computers, and the problem of fitting a spoken word into one half second", *Computers and Automation*, Nov. 1968, pp. 31–34—(Article).
- Patel, Jay, "Utility of voice response system depends on its flexibility", *Bank Systems & Equipment*, Dec. 1988, pp. 101/103—(Article).
- Buron, R.H., "Generation of a 1000-Word Vocabulary for a Pulse-Excited Vocoder Operating as an Audio Response Unit", *IEEE Transactions On Audio And Electroacoustics*, Mar. 1986, vol. AU-16, No. 1, pp. 21–25—(Article).
- Gaines, B.R., et al., "Some Experience in Interactive System Development and Application", *Proceedings of the IEEE*, Jun. 1975, vol. 63, No. 6, pp. 894–911—(Article).

US 6,434,223 B2

Page 9

- "Application For Registration Of Equipment To Be Connected To The Telephone Network", *Federal Communication Commission*, FCC Form 730.
- Dudley, Homer, "The Vocoder", Circuit Research Department, Dec. 1939, pp. 122-128—(Chapter from a Book).
- "Voice Response System Order Entry, Inventory Control". "Vendor Index", *Audiotex Directory & Buyer's Guide*, Fall/Winter 1989/90, pp. 114-156.
- Francas, M., et al., "Input Devices For Public Videotex Services", *Human-Computer Interaction—INTERACT '84*, 1985, pp. 171-175—(Paper).
- Labrador, C., et al., "Experiments In Speech Interaction With Conventional Data Services", *Human-Computer Interaction—INTERACT '84*, 1985, pp. 225-229—(Paper).
- Long, J., et al., "Transaction Processing Using Videotex or: Shopping on Prestel", *Human-Computer Interaction—INTERACT '84*, 1985, pp. 251-255—(Paper).
- Electrical Communication*, 1981, vol. 56, Nos. 1-4, pp. 1-110—(Paper).
- Conway, R.W., et al., "Tele-CUPL: A Telephone Time Sharing System", *Communication of the ACM*, Sep. 1967, vol. 10, No. 9, pp. 538-542—(Article).
- Marill, T., et al., "DATA-DIAL: Two-Way Communication with Computers From Ordinary Dial Telephones", *Communications of the ACM*, Oct. 1963, vol. 6, No. 10, pp. 622-624—(Article).
- Witten, I.H., "Communicating With Microcomputers", pp. 121-158—(Chapter from a Book).
- "Call-It-Co. Hangs Up On Dial-It In Four Markets", *The 976 Exchange*, 1984, vol. 2, pp. 1-6 (Article).
- "DECtalk Help Boston's Shawmut Bank Cut Costs And Improve Service", *Digital*—(Article).
- "VTK 81 Voice Computer", *VoiceTek*, 1987 (Brochure).
- "How a Computerized "Voice" Answers Customers' Inquiries", *Bank Automation Newsletter*, Feb. 1985, vol. 19, No. 2 (Article).
- Rickman, J., et al., "Speech Synthesizers—Communications Interface—Implementing A Touch Tone Telephone Talker With DECTalk", *The DEC Professional*, May 1985, pp. 38, 39, 42-44 (Article).
- "DECTALK DELIVERS", *Digital Review*, Sep. 1985—(Article) "DECTalk turns a telephone into a terminal"—"UNIX and Digital"—"Legal protection for semiconductor chips"—"Product safety",—*DECWORLD*, Apr. 1985, vol. 9, No. 2, pp. 1, 3, 5, 6-8—(Article).
- "DECTalk: A New Text-to-Speech Product" *Digital Guideline*, Mar. 1984, vol. 8, No. 3, pp. 1-8—(Article).
- Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 1, pp. 1-6 *Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 2, pp. 1-7 *Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 3, pp. 1-8 *Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 4, pp. 1-8 *Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 2, No. 2, pp. 1-8 *Straight Talk*, A Newsletter about the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 2, No. 4, pp. 1-8.
- Various References/Articles attached with a letter from Smithwin Associates, dated Apr. 22, 1992: Riley, A.A., "Latest: 2-way communication by computer and telephone" ??evens, W.?, "Computer Helps Children to Add", *The New York Times*, Apr. 20, 1970 Harvey, R.W., *Times*, The Kiplinger Magazine "A Computerized System ???", Nov. 23, 1970, p. 14, (unidentifiable Article) "Hardware for the 'cashless society'", *Electronic Design* 3, Feb. 4, 1971, p. 26 Tennant, R.P., "Advanced credit system smooths operation and hastens payout", *Data Processing Magazine*, Jun. 1971, vol. 13, No. 6, pp. 34-35 "Computers that talk back to you", *Business Week*, Date ?? Smith, Gene, "Chatting Via Computer", *New York Times*, Sep. 12, 1971 *EDP Weekly*, (unidentifiable Article) "Did Anybody Here Call a Computer", *Data Management*, Feb. 1967.
- Skala, Martin, "Straight talk from a computer", *Christian Science Monitor*, Jun. 14, 1973. "Computer for Watergate Probe", *Science*, Jun. 15, 1973. "Tapping AT&T for a 50-million refund", *Business Week*, Jun. 9, 1973. "Distrust of computer kills home service plan". Scherer, Ron, "Chit-chat with a computer", *Christian Science Monitor*, Apr. 16, 1975, p. 2. "Trying Out the Pay-by-Phone Service", *Technology Review*, Mar./Apr. 1976, p. 15. "Pentagon seeks more control", *Electronics*, Apr. 5, 1976, p. 39. "Everyman'Computer Terminal", *Industrial Research*, Mar./Apr. 1976, p. 14. "DOD could save on test equipment". Martin, J., et al., "The Computerized Society—An appraisal of the impact of computers on society over the next fifteen years", Chapter 10, pp. 211-226—(Chapter from a Book). New products, *Datamation*, Jul. 1966, vol. 12, No. 7, pp. 7/89—(Article).
- Meacham, L.A., et al., "Tone Ringing and Pushbutton Calling", *The Bell System Technical Journal*, 1958, pp. 339-360—(Book).
- Suppes, Patrick, "The Uses of Computers in Education", *Scientific American*, Sep. 1966, vol. 215, No. 3, pp.—(Article).
- Bruckert, E., et al., "Three-tiered software and VLSI aid developmental system to read text aloud", *Electronics*, Apr. 21, 1983, pp. 133-138—(Article).
- Hochman, David, "Implementing Automatic Number Identification", *Telecommunications*, Dec., 1978, vol. 12, No. 12—(Article).
- Martin, James, "Telecommunications and the Computer", 2nd Edition, Introduction, pp. 20-23, Chapter 5, pp. 94-95, Chapter 18—(Chapter from a Book).
- Martin, James, "Telematic Society", Chapter 6, pp. 45-48, Chapter 9, pp. 67-69, Chapter 20, pp. 181-188—(Chapters from a Book).
- Martin, James, "The Wired Society", pp. 53-55, 71-79, 99-100, 204-205, 229-231—(Chapters from a Book).
- Martin, James, "Future Developments in Tele-Communications", 2nd Edition, Box A, Chapter 1, p. 5, Chapter 7, pp. 95-111, Chapter 9, pp. 149-105, Chapter 12, pp. 207-209, Chapter 18, pp. 310-311, Chapter 19, pp. 314-317, 320, Chapter 20, pp. 330, Chapter 23, pp. 379-401—(Chapters from a Book).
- Ferrarini, E.M., "Infomania", pp. 59-61, 176-177, 191, 213-214, 223, 245, 250, 257, 285, 286—(Book).
- Kimura, Y., et al., "Audio Response System", vol. 55, No. 10, pp. 49-54—(Article in Japanese).
- Takano, Y., "Characteristics of Multipair Exchange Area Telephone Cable with Cellular Polyethylene Insulation by Gas Injection Blowing", p. 55—(Article in Japanese).

US 6,434,223 B2

Page 10

- Takahashi, T., et al., "SR-2000 Voice Processor and Its Application", *NEC Research and Development*, 1984, No. 73, pp. 98-105—(Paper).
- "Concept Diagram Voicemail International System" "Voicemail Instruction Manual", *Televoice International*, Jun. 1981, Index.
- Eckhouse, John, "Voice mail spells relief for phone frustration", *San Francisco Examiner*, Feb. 7, 1982 (Article).
- Meade, Jim, "Throw away those pink Call-back slips", *InterOffice*, Jan./Feb. 1984, vol. 3, No. 1—(Article).
- Welsh, Jack, "Everybody's Talking About Talking Bouquets", *Design for Profit*, Spring 1986, pp. 7-10—(Article).
- Mosco, Vincent, "Pushbutton Fantasies", Contents, Chapter 3 and 4, pp. 67-118—(Chapters from a Book).
- Bretz, Rudy, "Media for Interactive Communication", Chapter 5, pp. 110-116, Chapter 7, pp. 143-153—(Chapters from a Book).
- Robinson, G., et al., "Touch-Tone Teletext A Combined Teletext-Viewdata System", *IEEE Transactions on Consumer Electronics*, Jul. 1979, vol. CE-25, No. 3, pp. 298-303—(Article).
- Voice News, Mar. 1982 Voice News, Jun. 1982, *William W. Creitz Voice News*, Oct. 1982, p. 5 Voice News, Nov./Dec. 1983.
- "Consultant Report 28?", *AIS American Bell Advanced Information Systems*, Apr. 1983, pp. 27, 118-119, 123-124—(Report).
- "T-1 Board Sets Deliver High Performance All Digital T-1 Solutions", *NMS Natural MicroSystems*—(Product Bulletin).
- "VBX Product Family Overview", *NMS Natural MicroSystems*, pp. 1-20—(Brochure).
- "Machine Operation Manual", May 12, 1978, Issue 1, pp. 1-3, 9-10—(Manual).
- Davey, J.P., "Dytel Western Region Sales Training Manual", 1985—(Manual).
- Gutcho, Lynette, "DECtalk—A Year Later", *Speech Technology*, Aug./Sep. 1985, pp. 98-102—(Article) *.
- Daniels, Richard, "Automating Customer Service", *Insurance Software Review*, Aug./Sep. 1989, pp. 60-62—(Article).
- Golbey, S.B., "Fingertip Flight Service", Oct. 1985—(Article).
- "ARO Goes Pushbutton", *Newsletter*, Nov. 1985, p. 9—(Article).
- "ROLM Centralized Attendant Service", *ROLM Corporation*, 1979.
- "AIS, Versatile Efficient Information Service", *Fujitsu Limited*, 1972, p. 153-162—(Brochure).
- Smith, S.L., et al., "Alphabetic Data Entry Via the Touch-Tone Pad: A Comment", *Human Factors*, 1971, 13(2), pp. 189-190—(Book).
- Holtzman, Henry, "Still an Infant Technology VOICE MAIL", *Modern Office Technology*, Jun. 1985, pp. 78-80, 82, 84, 90—(Article).
- Leander, Monica, "Voice Response—A Technology for Solving Management Problems", *Speech Technology*, Mar./Apr. 1986, pp. 50-52—(Article).
- Stolker, Bud, "CompuCorder speech storage and output device. (evaluation)", *Creative Computing*, Jul. 1983, pp. 1-7.
- Witten, I.H., et al., "The Telephone Enquiry Service: a man-machine system using synthetic speech", *Int. J. Man-Machine Studies*, Jul. 1977, 9, pp. 449-464—(Book).
- Gould, R.L., "Fidelity's Automated Voice Response System", *Telecommunications*, Jan. 1981, pp. 27-28—(Article) "Fidelity Automated Service Telephone", *Fidelity Group*, 4 pages—(Manual) *.
- "Data Set 407 Interface Specification", *Manager—Data Systems & Operations*, Jun. 1975, Issue 2, pp. 1-69 plus Table of Contents—(Manual).
- Fitzwilliam, J.W., et al., "Transaction Network, Telephones, and Terminals", *The Bell System Technical Journal*, Dec. 1978, vol. 57, No. 10, pp. 3325-3537—(Book).
- Inbound Outbound*, May 1988, complete issue.
- Koch, Helmut, "Concord Design Services, Inc. Corporate Description", *Exacom Federal Communications Commission*, FDC Form 484, Registration, Registrant: Concord Design Services, Inc. *Exacom Telecommunication Systems*—Brochure General Description Installation and Operation Manual for Direct Inward Dial (DID) Trunk Interface Unit, *Exacom Telecommunication Systems*, Nov. 21, 1989, Issue 3—(Manual) General Description Installation and Operation Manual for Answering Service Monitor System, *Concord Design Services, Inc.*, Dec. 19, 1986, Issue 1—Manual.
- "Dialogic Voice Solutions", *Dialogic Corporation*, pp. 1-72 "Why Is T-1 Important And How Can It Be Used", *Dialogic Corporation*, Application Note, pp. 1-6 "Use of Dialogic T-1 For Telemarketing Applications", *Dialogic Corporation*, Application Note, pp. 1-6 "Use of Dialogic T-1 In Operator Service Applications", *Dialogic Corporation*, Application Note, pp. 1-6 "Use of Dialogic T-1 In Telephone Company Networks", *Dialogic Corporation*, Application Note, pp. 1-10 "Use of Dialogic T-1 Equipment in CPE Gateways", *Dialogic Corporation*, Application Note, pp. 1-4 "Integrating Analog Devices into Dialogic-Based T-1 Voice Processing Systems", *Dialogic Corporation*, Application Note, pp. 1-16 "Use of Dialogic Components in Automatic Number Identification (ANI) Systems", *Dialogic Corporation*, Application Note, pp. 1-16 "Dialogic Unit Pricing", pp. 1-6.
- "Voice '92 Spring Conference & Exposition", 1992, pp. 1-24—(Brochure).
- "Telecom Developers '92", Jan. 1992—(Advertisement).
- Newton, Henry, "The Sheer Thrill Of It All", *Teleconnect*, May 1991.
- "AFIPS Conference Proceedings", 1987 National Computer Conference, Jun. 15-18, 1987, Chicago, Illinois "Dynamic Network Allocation".
- "Calling your computer is as easy as calling your broker, says AT&T", *Record*, Nov. 1985.
- Singleton, L.A., "Telecommunications in the Information Age", Chapter 12, pp. 115-125—(Chapter from a Book).
- Weitzen, H.S., "Telephone Magic", pp. 28-31, 38-39, 54-55, 62-67, 70-79, 82-85, 88-91, 106-115, 118-121, 126-127, 134-137, 176-177, Index—(Chapters from a Book).
- Weitzen, H.S., et al., "Infopreneurs", pp. 18-19, 138-145, 206-209, Index—(Chapters from a Book).
- Sullivan, Kathleen, "Paper firm relies on voice-based inventory system", *IDG Communications, Inc.*, Sep. 10, 1984—(Script).
- "VTK Training Section" and "Disk Initialization Procedures for VTK-30/60", *Voicetek Corporation* —(Manual).
- "VoiceStor Systems Integration Guide", *Voicetek Corporation*, May 2, 1983—(Manual).

US 6,434,223 B2

Page 11

- “VTK 60 Voice Computer—Technical Description”, *Voice-tek Corporation*, Oct. 1986—(Manual).
- “Voicetek VS-50 Telephone Interface System”, Apr. 25, 1984, System Integration Guide—(Manual).
- “VTK Voice System—Programmers Guide”, *Voice-tek*—(Manual).
- “Disk Initialization Procedures for VTK-30/60”, *Voice-tek Corporation*—(Manual).
- “VTK81 Voice Computer—Technical Description”, *Voice-tek Corporation*, Oct. 1986—(Manual).
- “VTK Voice System—VTK/CE Guide”, *Voice-tek*, Jul. 6, 1987—(Manual).
- Newton, Harry, “Newton’s Telecom dictionary”, *Telecom Library Inc.*, 1991—(Advertisement).
- “1987 Buyers Guide”, *Teleconnect*, Jul. 1987, pp. 194, 197–210—(Brochure).
- Syntellect Inc.—Advertisements.
- Various copies of Business cards.
- Guncheon, M.C., “The Incredible Dial-A-Message Directory”, *Contemporary Books, Inc.*, 1985—(Directory).
- “Voice Box Maintenance Manual”, *Periphonics*, 1986—(Manual).
- “Voicepac Maintenance Manual”, *Periphonics*, 1984—(Manual).
- Dyer, Ellen, “Wichita Firm Sells 25% Share”, Dec. 14, 1987, and “Spectrum Carving Role in Volatile Business”, Jul. 7, 1986, Search Results.
- “Don’t Miss The Unique Gift Idea Of The Year”, *Yam Educational Software*, 1987—(Advertisement).
- “Welcome to the future of advertising.”, *Teleline, Inc.*, 1990—(Presentation).
- “Greeting Card Project”, *Teleline, Inc.*, Nov. 7, 1988—(Flow Chart).
- Sharkey, Betsy, “Dialing for Dollars and Data”, *Adweek*, Nov. 16, 1987, pp. 6–8—(Article).
- Gay, Verne, “CBS may tie rates to buying p?”, 1988—(Article).
- Flanagan, J.L., et al., “Synthetic Voices For Computers”, *IEEE International Conference on Communications*, 1970, pp. 45–9—45–10—(Conference Record).
- Rabiner, L.R., et al., “Computer Voice Response Using Low Bit Rate Synthetic Speech”, *Digest IEEE 71 International Convention*, Mar. 22–25, 1971, p. 1–2, Fig. 1–2—(Paper).
- “DT1000 DIGITALKER Speech Synthesis Evaluation Board”, *National Semiconductor Corp.*, Oct. 1980—(Manual).
- “Data Set 407C Interface Specifications Nov. 1977”, *Bell System Technical Reference*, Nov. 1977, pp. 1–50—(Paper).
- Broomfield, R.A., et al., “Making a data terminal out of the Touch-Tone telephone”, *Electronics*, Jul. 3, 1980, pp. 124–129—(Paper).
- Godfrey, D., et al., “The Telidon Book—Designing and Using Videotex Systems”, pp. 1–103—(Book).
- “Industry Marketing Bulletin”, *Honeywell EDP Wellesley Hills*, Aug. 9, 1967.
- “Honeywell Communications Configuration Charts And Aids In Designing”, *Data Communications*, pp. 3–1—3–7 and A.
- “Burroughs Audio Response System”, Reference Information for Sales Representatives, pp. 1–6 “New Product Announcement”, *Burroughs Corporation*, Feb. 5, 1968.
- “Stand-Alone Lockbox Application Voice Response (Slave) Communication System Functional Specification”, *Cognitronics Corporation*, Feb. 19, 1982, p. 21 “Unlock lockbox reporting. with Cognitronics Voice Response Communications System/Banking.”, *Speech-maker a division of Cognitronics Corporation* “Voice Response for Banking”, *Cognitronics Corporation* (Brochure) “voice response application brief”, *Speech-maker*—(Brochure) “Instant credit authorization is an easy touch when any telephone is a voice response computer terminal”, *Speech-maker a division of Cognitronics Corporation*—(Article).
- Slutske, Gary, “Relationship marketing”, *Forbes*, Apr. 3, 1989—(Article).
- Finnigan, P.F., “To Our Shareholders”, Jun. 1985, Apr. 7, 1986, Apr. 10, 1987—(Letters) “International Programs” (Voicemail).
- Finnigan, P.F., “Our guest”, *Radio-Schweiz AG Telekommunikation und Flugsicherung*, Jan. 1983, pp. 12–14—(Bulletin).
- Finnigan, P.F., “Voice mail”, *1983 National Computer Conference*, May 16–19, 1983, Anaheim, CA, pp. 375–377 and Abstract.
- “Conversations in Your Mailbox”, *Software News*, Jan. 1985—(Article).
- Fredric, Paul, “Voicemail Int’l, Radio Page America To Offer A ‘Pocket News Network’”, *Communications Week*, Jul. 8, 1985—(Article).
- “Voice-Messaging System: Use It While You’re In, Not Out”, *Information WEEK*—(Article).
- “Corporate Performance—Companies To Watch”, *Fortune*, Sep. 30, 1985—(Article).
- “Dream Weaver”, *Jon Lindy*, Aug. 1986, pp. 32–35, 37—(Article).
- “Turn any telephone into a complete electronic message service”, *Voicemail*—(Brochure).
- Pages from Company Brochure, *Televoice International, Inc.*
- “VMI Big Talker”, *Voicemail International, Inc.*—(Newsletter).
- “Newsline”, *Voicemail International, Inc.*, Oct. 1984 and Nov. 1984, “Voiceletter No. 1”, *Voicemail International, Inc.*, Dec. 1985.
- “A New, More Productive Way to Use the Telephone”, *Voicemail International, Inc.*—(Brochure) “While You Were Out . . . ”—(Brochure) “For People Who Can’t Afford To Miss Messages”, *Voicemail International, Inc.*—(Brochure) “Voicemail The electronic news service saves time, money and nerves”, *Radio-Suisse Ltd.*, (Voicemail Agent for Europe)—(Brochure) “Are You Being Robbed of Your Time . . . ?”, *Voicemail International, Inc.*—(Brochure).
- “Voicemail Instruction Manual B—85”, *Televoice International*, Nov. 1980—(Manual) “Local Telephone Numbers”(for Voicemail) and “Televoice Is As Easy As 1, 2, 3!”, *Televoice International*—(Manual) “Voicemail Instruction Manual C—25”, *Televoice International*, Jun. 1981—(Manual) “Telephone Numbers” (for Voicemail) and “How To Use Voicemail”, *Televoice International*—(Manual) “Message Receiving/Sending” (and others), *Voicemail International, Inc.*—(Manual) “You Can Use Voicemail To Send And Receive Messages At Anytime Anywhere In The World”, *Voicemail International, Inc.*, 1981—(Brochure) “Advanced User Guide”, *Voicemail International, Inc.*—(Manual) “Voicemail’s Basic User’s Guide”, *Voicemail International, Inc.*—(Manual).

US 6,434,223 B2

Page 12

- "Welcome To Dowphone", *Dowphone*, Jan. 1986—(Manual).
- "Telephone 1-800 Check-PDR", *Officers of Medical Economics Company, Inc.*, 1986—(Circulation/Brochure).
- "Turn your telephone into an efficient electronic "mailbox""", *Western Union*, Jan. 1984,—(Brochure) "Western Union Voice Message Service User's Guide", *Western Union*, Jul. 1984—(Brochure).
- "PSA's 24 hour reservation system", *PSA*, Sep. 1986—(Brochure).
- "To Better Serve Your Business, We're On Call Days, Nights and Weekends.", *Maryland Business Assistance Center*—(Brochure).
- "Voice Response: Breaks Through Call Blockage.", *Business Week*, Aug. 26, 1985—(Advertisement for Preception Technology Corporation).
- "Tools for heavy hitters", *Forbes*, May 6, 1985.
- "The Fidelity Automated Service Telephone", *Fidelity Group*—(Manual/Brochure).
- "Stockquote Hotline", *Norwest Brokerage Services*—(Brochure) "All You Need To Get The Stock Quotes And News You Want." *Dowphone*, 1984—(Advertisement).
- "The Most Respected Name In Telemarketing", *West Interactive Corporation*—(2 Brochures).
- Borison, V.S., "TRANSACTION—telephone gets the fact at the point of sale", *Bell Laboratories Record*, Oct. 1975, pp. 377-383—(Article).
- Demeautis, M., et al., "The TV 200 A Transactional Telephone", *Communation & Transmission n 5*, 1985, pp. 71-82—(Article).
- Eriksson, G., et al, "Voice and Data Workstations and Services in the ISDN", *Ericsson Review*, May 1984, pp. 14-19—(Article).
- Schrage, Michael, "A Game Von Meister in Pursuit of Profits", *Washington Post*, Sep. 23, 1985—(Article).
- Svigals, J., "Low Cost Point-Of-Sale Terminal" *IBM Technical Disclosure Bulletin*, Sep. 1982, vol. 25, No. 4, p. 1835.
- Turbat, A., "Telepayment And Electronic Money The Smart Card", *Communation & Transmission n 5*, 1982, pp. 11-20—(Article).
- "Voice Mail", *Sound & Communications*, Apr. 1983, vol. 28, No. 12, pp. 84-85—(Article).
- Aso, Satoshi, "Trends and Applications of Voice Output Devices", *2209 J.E. Journal of Electronic Engineering*, Feb. 1982, vol. 19, No. 182, pp. 102-107—(Article).
- Kroemer, F., "TELEBOX", Unterrichtsblätter, year 38/1985, No. 4, pp. 131-141 (Article)—no translation.
- Kroemer, F., "TELEBOX", Unterrichtsblätter, year 41/1988, No. 2, pp. 67-83 (Article)—no translation.
- C.R. Newson, "Merlin Voice Mail VM600," British Telecommunications Engineering, vol. 4, Apr. 1985, pp. 32-35.
- A.S. Yatagai, "Telephonic Voice Synthesis Systems," Telecommunications, Aug. 1985, pp. 56h-I, 68.
- A.J. Waite, "Getting Personal With New Technologies For Telemarketers," DM News, Feb. 15, 1987 at 50 *.
- "Shopping via a network is no longer just talk," Data Communications, Aug. 1981 at 43.
- "Growth-Oriented Systems," Restaurant Technology, Nation's Restaurant News Newspaper, Jul. 1, 1985 at 51.
- "Let your fingers do the tapping . . . and the computer the talking," Modern Office Tech., May 1984 at 80.
- "American Software unveils systems for IBM mainframes," Computerworld, Mar. 26, 1984 at 59.
- "Business Units Get Order Entry," Computerworld, Jul. 12, 1982 at 36.
- Dial Info Articles (various articles with various dates) (R0016101-R0016188).
- Svigals, J., "Security Method For Remote Telephone Banking," *IBM Technical Disclosure Bulletin*, vol. 23, No. 12, May 1981, pp. 5306-5307 (pb424).
- AT&T Conversant Voice Response Systems Historical Overview, Jan. 1988 (FD 023585-FD023596).
- "All About Automated Attendant Systems," Datapro Research Corporation, Mar. 1987 (SM 1000682-SM 1000691).
- "New Product—Dytel's Automated Switchboard Attendant," reprinted from *Business Communications Review*, Mar.-Apr. 1984, pp. 39-41 (SM10006976-SM1000699).
- Arbogast, James G. et al., "Home Diabetes Monitoring Through Touch-Tone Computer Data Entry and Voice Synthesizer Response," Annual Symposium on Computer Applications in Medical Care 8th Care Proceedings—Eighth Annual Symposium on Computer Applications in Medical Care, 1984 (MMI 020731).
- Perdue, Robert J., et al., "AT&T Voice Processing System Architectures," *AT&T Technical Journal*, Sep./Oct. 1990, pp. 52-60 (MMI 024142-MMI 024151).
- Sable, E.G., et al., "AT&T Network Services Architecture Capabilities, Administration and Performance," *AT&T Technical Papers*, International Switching Symposium-ISS '87, AT&T Network Systems, Mar. 15, 1987.
- "The Stored Program Controlled Network" *The Bell System Technical Journal*, Sep. 1982.
- The World's Telephones, a Statistical Compilation as of Jan. 1980, AT&T Long Lines, 1981 (Book).
- Engineering and Operations in the Bell System, AT&T Bell Laboratories, 1983 (Book).
- Joel, A.E., "A History of Engineering and Science in the Bell System, Switching Technology (1925-1975)," Bell Telephone Laboratories, 1982 (Book).
- "ISDN—Proceedings of the conference held in San Francisco, Nov. 1986," OnLine, New York: London.
- Raack, G.A., et al., "Customer Control of Network Services," *IEEE Communications Magazine*, Oct. 1984 (A21717089) also ISS 84, Florence Italy, May 1984.
- Soderberg, J.H., "Machines at your Fingertips," *Bell Laboratories Record*, Jul. 1969 (A21717175).
- Gawrys, G.W. et al., "A New Protocol for Call Handling Functions for the SPC Network," *Globecrom '82 Conference Record*, Nov./Dec. 1982.
- Buss, C.M., "Tuning the Human/Machine Interface for AT&T Advanced 800 Service," *IEEE*, Jul. 1985.
- Asmuth, R.L., et al., "Transaction Capabilities for Network Services," *Globecom '85 IEEE Global Telecommunications Conference*, New Orleans, Dec. 1985.
- Mahood, Gerald K., "Human Factors in TOUCH-TONE Data Systems," *Bell Laboratories Record*, Dec. 1971 (A21717170).
- "4 ESS System Evolution," *Bell System Technical Journal*, Aug. 1981.
- Basinger, R. G., et al., "Calling Card Service—Overall Description and Operational Characteristics", *The Bell System Technical Journal*, Sep., 1982.
- Confalone, D. E., et al, "Calling Card Service—TSPS Hardware, Software, and Signaling Implementation", *The Bell System Technical Journal*, Sep., 1982.

US 6,434,223 B2

Page 13

- Eigen, D.J., et al., "Calling Card Service—Human Factors Studies", The Bell Technical Journal, Sep., 1982.
- Lexis Search , Nov. 1, 1984, re: System 85 Computer Process.
- Lexis Search, Jan. 28, 1985, re: Rolm Releases Four-Channel Phonemail Voice Message Unit.
- Inquiry Letter To The F.C.C., From Attorneys For the Prior Title Holder Seeking Rulings That A Particular Game wold Not Be Considered A Lottery Under F.C.C. Reply Letter From The F.C.C. To The Inquiry Letter Stating The Requested Rulings.
- Reply Letter From The F.C.C. To The Inquiry Letter Stating The Requested Rulings.
- A page (p. 7) from literature on the Charles Schwab corporation, which is not dated nor identified.
- A page (p. 4) from an annual report dated Mar. 1, 1989, though the actual date on which the report was distributed to the public is unknown.
- An early brochure based on a Mar., 1989, survey by Charles Schwab & Co., Inc.
- A trademark scan (U.S. Federal) indicating a first date of use for Telebroker in Jun. 18, 1988.
- Bulfer, Andrew F., "AT&T's Pay-Per-View Television Trial", published in AT&T Technical Journal, May/Jun., 1987.
- Friedes, A., et al., "ISDN opportunities for large business—800 service customers," IEEE International Conference on Communications '86, Jun. 22–25, 1986, vol. 1, pp. 28–32.
- Allyn, Mark R. et al., "Planning for people: Human factors in the design of a new service," Bell Laboratories Record, May 1980, pp. 155–161.
- Hanson, Bruce L., et al., "No. 1A VSS New custom calling services," Bell Laboratories Record, Jun. 1980, pp. 174–180.
- Aarons, D., "The Voice of the 80's," PC Magazine, vol. 4, No. 5, Mar. 5, 1985, p. 114 (A21707135).
- "ACD 'Magic' from AT&T's Merlin," Telecommunications Product Review, vol. 13, No. 4, Apr. 1986 (A21708371).
- "Actor Promotes Phone Services," Hammond Louisiana Star, Aug. 23, 1984 (A21708860).
- Allerbeck, M., "Experience with the Voice Mail System EMS 2000 Info—Results of an Acceptance Study," ISS '84 Florence, May 1984, Session 14 A, Paper 6, p. 1.
- Amano, Fumio, et al., "Imagephone!!: Integrated Voice/Data Terminal With Hand-Drawing Man-Machine Interface," IEEE, 1985 (A03701430).
- Ambrosio, Johanna, "Electronic and Voice Mail; They're No Match for Each Other—Yet," Computerworld, May 19, 1986, p. 53 (A21708461).
- "American-Network: Files Complaint Against Pacific Northwest Bell," Business Wire, Jun. 4, 1986 (A21708495).
- "American-Network: Signs Letter of Intent to Merge L D Communications Long Distance Service into the Company," Business Wire, Aug. 14, 1984 (A21708856).
- Andrews, Edmund L., "Patents: Computer System Lets TV Audience Join Show," The New York Times, Dec. 24, 1988 (A01331146).
- Arnst, Catherine, Press Release, Reuters, Sep. 16, 1984 (A21708908).
- "AT&T Announces Major Additions to Telemarketing Products and Services," Telephone News, Dec. 14, 1987 (A21723927).
- "AT&T; AT&T Announces New Software Enhancements," Business Wire, Feb. 10, 1987 (A21707782).
- "AT&T Announces New Software Enhancements for its PBX," PR Newswire, Feb. 10, 1987 (A21707779).
- "AT&T Computer System will be Produced Here," The Columbus Dispatch, Sep. 9, 1985 (A01354694).
- "AT&T CPU Puts Voice Recog on Any Phone," Article Source Unknown (A01354681).
- "AT&T Inaugurates Pay-Per-View TV," Bell Laboratories Record, Jan. 1986 (A21708191) repeated (A21716664).
- "AT&T's Digital MERLIN," Telecommunications Product Review, vol. 13, No. 7, Jul. 1987 (A21724743).
- "AT&T's Flagship System 75: A Comprehensive Analysis of the System 85's 'Little Cousin,'" Telecommunications Product Review, vol. 11, No. 7, Jul. 1984 (A21724612).
- "AT&T Forms Unit to Sell Synthetic Speech Systems," Wall Street Journal, Sep. 10, 1985 (A01354689).
- "AT&T Plans Computer Unit," The New York Times, Sep. 10, 1985 (A01354690).
- "AT&T; Showtime's Viewer's Choice, Viacom Cable and AT&T to Test Pay-Per-View Ordering System," Business Wire, Dec. 5, 1985 (A21708103).
- "AT&T Sports Service," PR Newswire, Sep. 24, 1980 (A21710432).
- "The AT&T System 25," Telecommunications Product Review, vol. 13, No. 8, Aug. 1986 (A21706368).
- Press Release, PR Newswire, Nov. 1, 1984 (A21708963).
- AT&T Technical Journal—The 5ESS Switching System, vol. 64, No. 6, Part 2, Jul.–Aug. 1985 (A21723626).
- Excerpt from AT&T Technical Journal, Sep.–Oct. 1990, pp. 53–60 (A21723942).
- "Automated Switchboard Attendant Helps Insurance Company Control Net Expenses," Communications News, Jul. 1985 (A21726011).
- Aversano, Nina, "The Telephone as Computer," Review of Business, Fall 1989, p.5 (A21723928).
- Ayres, Paul, "Voice Response Pay-By-Phone Matures," Computerworld, Nov. 9, 1979, p. 47 (A21725960).
- Baker, Janet M., "Voice—Store—And—Forward: The Voice Message Medium," Speech Technology, Aug.–Sep. 1984 (A21724633).
- Bakke, Bruce B., "Electronic Voice Mailbox: Potential for Fast Growth," BC Cycle, Jun. 29, 1984 (A21708785).
- Bakke, Bruce, B., "GTE's 'Voice Mailboxes' Page the World," U.P.I., Apr. 11, 1983 (A21713359).
- Barbetta, Frank, "AT&T Offers Digital PBX Enhancements," Electronic News, vol. 30,, Nov. 5, 1984, p. 69 (A21708967).
- Barbetta, Frank, "Custom Functions Offered in New AT&T Co. Package," Article Source Unknown (A21726008).
- Barkauskas, B. J., et al., "Network Services Complex: A Generalized Customer Interface to the Telephone Network," IEEE International Conference on Communications, Conference Record, vol. 2, Jun. 1983, p. 805 (A21725715).
- Barlin, David, "Switch-Hitter: A Data Man's Guide to the World of Voice," Data Communications, Oct. 1984, p. 114 (A21708926).
- Basso, Richard J., et al., "Expanding the Capabilities of the ! Traffic Service Position System," Bell Laboratories Record, Feb. 1983, pp. 22–27 (A21724556).
- Belcher, Jerry, "Earthquakes in Mexico; U. S. Relief Includes Hardware, Experts; Cash Aid Suggested," Los Angeles Times, Sep. 22, 1985 (A21708026).
- "Bell Files Tariffs on CO-Based Switching System in PA.," Communications, Date Unknown (A21725944).

US 6,434,223 B2

Page 14

- Bell Laboratories Record, Aug. 1984, Cover Page and Table of Contents (A21708811).
- The Bell System Technical Journal, May-Jun. 1982 (A21709814).
- Excerpt from The Bell System Technical Journal, Oct. 1980, pp. 1384-1395.
- Bertoglio, O., et al., "An Interactive Procedure for Voice Messaging Services in a Traditional Network," CSELT Technical Reports, vol. 12, Supplement 10, No. 3, Jun. 1984 (A21708755).
- Bingham, Sanford, "Groceries By Phone," Inbound/Outbound, Aug. 1988 (A21725728).
- "Some Tips on Integration," Inbound/Outbound, Aug. 1988 (A21725731).
- Black, Philip, "How ISDN Services Could Make or Break the Big Network," Data Communications, Jun. 1984, p. 247 (A21708771).
- "'Blast' from Data Systems Runs Under DG's AOS/VS," Computerworld, May 3, 1982, p. 38 (A21724423).
- Booker, Ellis, "How to Save Big Bucks on Phone Calls," Computer Decisions, vol. 16, Nov. 15, 1984, p. 16 (A21708983).
- Borcherding, J. W., et al., "Customized Switching Systems," ISS'84 Florence, May 1984, Session 14 A, Paper 4, pp. 1-5 (A21725533).
- Bowling, Tom, "Pay TV: A Pay-Per-Minute System Prototype," Television: Journal of the Royal Television Society, Mar.-Apr. 1984, pp. 79-83 (A21724588).
- Brady, Erik, "Players, Fans Get Back in the Swing," USA Today, Date Unknown (A21706710).
- Brady, Erik, "Resentful Fans Verbally Strike Back," USA Today, Date Unknown (A21706709).
- Brooke, Jill, "A Hi-Tech Interactive TV Service is Planned," New York Post, Jan. 20, 1989 (A01331148).
- Brown, Jim, "Contracts; Rolm Wins College Bid," Network World, Mar. 9, 1987, p. 4 (A21707859).
- Brown, Jim, et al., "ICA Preview; AT&T May Steal Show," Network World, May 26, 1986, p. 1 (A21708473).
- Brown, Jim, et al., "PBX Market; Rolm Beefs up CBX Line Capacity," Network World, Feb. 9, 1987, p. 4 (A21707777).
- Brown, Jim, "VMX 5000 Series; Voice Messenger Debuts," Network World, Oct. 13, 1986, p. 6 (A21706653).
- Brown, Jim, "Voice Mail; Rolm to Accounce New LowCost Phonemail," Network World, Feb. 2, 1987 (A21707763).
- Buckhout, Wayne, "Columbus-Born AT&T Computer Listens, Talks and Shows Promise," Article Source Unknown, Sep. 10, 1985 (A01354692).
- Bulfer, Andrew F., et al., "A Trial of a National Pay-Per-View Ordering and Billing System," NCTA, 1986 (A21724669).
- Burstyn, H. Paris, "Phone Features: The Next Wave," High Technology, Jun. 1986 (A21726009).
- Capital Cities/ABC Video Enterprises, Inc. Teams with FDR Interactive Technologies to Explore Applications for New Telephone Technology, Capital Cities/ABC, Inc. Broadcast Group, Jan. 19, 1989 (A01331147).
- Carlson, Rolf, et al., "Text-To-Speech conversion in Telecommunications," Proceedings of the Tenth International Symposium on Human Factors in Telecommunications, Jun. 1983, pp. 239-245 (A21725801).
- Press Release, PR Newswire, Dec. 5, 1985 (A21708106).
- Chapin, Dwight, "A Kids' Game," Article Source Unknown (A21706674).
- Charlish, Geoffrey, "Telephone Message that Failed to Get Across to the U. K.," Financial Times, Jan. 16, 1986 (A21708203).
- Collins, Francis R., "Reality of Equal Access: Implementation Problems," Telephone Engineer & Management, vol. 88, Sep. 1, 1984, p. 128 (A21708884).
- "Company News: Phone Service to be Tested," The New York Times, Jan. 20, 1989 (A01331395).
- "Components," Electronic News, 1984 (A21726007).
- "Computerized Telecommunications Switching Systems," Article Source Unknown.
- Connolly, James, "Republican Convention Set to Test Telecommunications," Computerworld, Jul. 9, 1984, p. 17 (A21708804).
- Conroy, Cathryn, "Audiotex Arrives," Monitor, Date Unknown (W71189).
- "Corporate Preoccupation with Costs Spurs Telephone Management Sales," Computerworld Focus, May 14, 1986, p. 13 (A21708457).
- Cox, John D., "Talk Into Telephone, Command a Computer," The Sacramento Bee, Sep. 10, 1985 (A01354683).
- "CPU, PBX Vendors Drawing Alliances," Computerworld, Apr. 23, 1984, p. 15 (A21708674).
- Crawford, K. E., et al., "4A Toll Crossbar Application," The Bell System Technical Journal, vol. 57, No. 2, Feb. 1978, pp. 283-323 (A21716223).
- Croxall, L. M., et al., "Operational Experience with the 5ESS™ Switch," ISS Florence, Session 42 A, Paper 4, May 1984 (A21725550).
- Cummings, Steve, "Voice-Mail Systems Attract Tentative Interest," PC Week, vol. 3, No. 49, Dec. 9, 1986, p. 140 (A21707565).
- Curtis, Janice, "At a Turning Point, VMX Makes Moves to Boost Voice Messaging Business," Dallas Business Courier, vol. 2, No. 13, Section 1, Jul. 14, 1986, p. 19 (A21706328).
- Daniel, Heidi C., "Inventor Battles Computer Giants," South Florida Business Journal, Aug. 12, 1985 (A21707969).
- Press Release, Communications Daily, vol. 4, No. 177, Sep. 11, 1984, p. 7 (A21708903).
- Danner, Patrick, "Dial Info Charges Electronics Giant Disconnected Deal," San Francisco Business Times, vol. 2, No. 33, Apr. 18, 1988 (A21724767).
- Excerpt from Data Communications, Sep. 1985, pp. 399-410 (A21707991).
- Davis, Judith R., "Voice Messaging System," Patricia Seybold's Office Computing Report, vol. 10, No. 9, p. 1-28 (A21716964).
- Day, J. F., et al., "Networking Voice and Data with a Digital PBX," AT&T Technology, Date Unknown (A21707584).
- Whitten, W. B., II, "Advanced Interfaces Speed Delivery of Services," AT&T Technology, Date Unknown (A21707593).
- "Definity Announcement Includes Other New Products," Telecommunications Product Review, vol. 16, No. 3, Mar. 1989 (A21712758).
- DeLessio, N. X., et al., "An Integrated Operator Services Capability for the 5ESS System," ISS '84 Florence, May 1984, Session 22 C, Paper 3, Page 1-5 (A21725538).
- Desmond, Paul, "Patented Call-Routing Tool Boon for Retail Industry; Instalink Will Use ISDN for Automatic No. ID," Network World, Aug. 1, 1988 (A21712653).
- "Dial-A-Drill," The New York Times, Jan. 20, 1969 (A21725951).
- "Dialing for Pennies," California Living Magazine, Aug. 12, 1984 (A21708855).

US 6,434,223 B2

Page 15

- "Distributed Data Processing and Messaging Systems," Data Communications, May 1986, p. 105 (A21708428).
- Dix, John, "AT&T Breathes New Life into its Switch-and-Wire Beast," Network World, Oct. 27, 1986, p. 1 (A21706662).
- Dix, John, "AT&T Tries Different Tack," Computerworld, Nov. 25, 1985, p. 19 (A21708097).
- Dix, John, "AT&T Unleashes 'Gazelle,'" Computerworld, Apr. 30, 1984, p. 2 (A21708710).
- Dix, John, "Enhancements Out for AT&T's High-End PBX," Computerworld, Nov. 12, 1984, p. 99 (A21708970).
- Brown, Jim, "VMX 5000 Series: Voice Messenger Debuts," Network World, Oct. 13, 1986, p. 6 (A21706653).
- Dix, John, "Ford Motor Co.; Driving Down Costs with Voice Mailboxes," Network World, Jul. 14, 1986, p. 32 (A21706326).
- Dix, John, "Hello, This is a Voice Mail Recording," Network World, Jul. 14, 1986, p. 1 (A21706331).
- Dix, John, "Rolm; Long-Awaited Redwood to Debut at ICA Today," Network World, Jun. 2, 1986, p. 4 (A21708493).
- Dix, John, "Switch Management: DEC Tools Debut at ICA," Network World, Jun. 9, 1986, p. 8 (A21708497).
- Dix, John, "Unified Messaging; AT&T Reveals New Message Blueprint," Network World, Sep. 22, 1986, p. 1 (A21706473).
- Dix, John, "Voice/Data PBXs: More than Today's Users Need?," Computerworld, Apr. 23, 1984, p. 14 (A21708669).
- Dorros, Irwin, "Evolving Capabilities of the Public Switched Telecommunications Network," Business Communications Review, Jan.-Feb. 1981 (A21725652).
- Dowd, Ann Reilly, et al., "Dollars from Dialing," Fortune, Mar. 16, 1987, p. 10 (A21707869).
- Drinkwater, Larry, "Voice Processing: An Emerging Computer ? Technology," Speech Technology, Aug.-Sep. 1984, pp. 50-54 (A21708826) (illegible).
- Edwards, M., "Digital PBXs Zero in on the Key Role as Hub of Office," Communications News, vol. 21, No. 12, Dec. 1984, p. 44 (A21708992).
- Egly, Diana G., et al., "Mnemonic Aids for TelephoneBased Interfaces," Proceedings of the Eleventh International Symposium on Human Factors in Telecommunications, Sep. 1985 (A21725818).
- Eichenwald, Kurt, "Just a Phone Call Away: More Dial-It Services," The New York Times, Apr. 16, 1988 (A21725852).
- Excerpt from Electrical Communication Facilities (in Japanese), vol. 33, No. 9, 1981 (A21724248).
- "Electronic Switching: Digital Central Office Systems of the World," Edited by Amos E. Joel, Jr., IEEE Press, 1982 (A21716673).
- "Electronic Voice Mail Revolutionizing Communications," Tulsa Business Chronicle, vol. 5, No. 26, Jun. 30, 1986 (A21708510).
- Press Release, PR Newswire, Mar. 20, 1984 (A21708647).
- Elliot, Thomas R., "A Voice in the Wilderness," Computerworld, Jun. 13, 1984, p. 76 (A21708779).
- Emerson, Jim, "Catalog Business," DM News, Dec. 15, 1985 (A21708115).
- Emerson, Jim, "Eliminating Live Operators," DM News, Dec. 15, 1985 (A21708114).
- Engelhardt, Robert M., "Island Paradise Gets System Update," Telephone Engineer & Management, vol. 88, Sep. 15, 1984, p. 104 (A21708904).
- Evan, S. A., et al., "Talking and Listening to the Conversant 1 Voice System," AT&T Technology, Date Unknown (A21710392).
- Fantel, Hans, "Video: Movies Hot Off the Tube," The New York Times, Mar. 29, 1987 (A21707890).
- "The Father of Voice Messaging," Network World, Nov. 1984, p. 57 (A21708942).
- Feldman, Robert, "New AT&T Packages Designed to Spruce up Systems 75/85," MIS Week, Jun. 2, 1986, p. 30 (A21725895).
- Fine, Happy, "Tavern on the Bluegrass," Eastern Basketball, Date Unknown (A21706749).
- "Firm Created After Patent Suit Against First Data," Reuters, Oct. 17, 1994 (A01331388).
- Fischell, David R., et al., "Interactive Voice Technology Applications," AT&T Technical Journal, Sep.-Oct. 1990 (A34100164).
- Foster, Robin Harris, "In the Forefront with Integrated Call Centers," AT&T Technology, vol. 7, No. 4, 1992 (A21712913).
- Froehlich, F. E., et al., "The Switched Network Transaction Telephone System," The Bell System Technical Journal, vol. 57, No. 10, Dec. 1978, pp. 3475-3485 (A21725995).
- Froehlich, Leopold, "Are Smart Buildings a Dumb Idea? If They're Going to Prosper, Shared Service Providers Will Have to Move from Telephony into Office Automation," Datamation, vol. 31, Oct. 1, 1985, p. 101 (A21708046).
- Gates, G. W., et al., "Software," The Bell System Technical Journal, vol. 61, No. 5, May-Jun. 1982, pp. 863-883 (A21725913).
- Gawron, L. J., et al., "Scanned-Image Technologies Bring New Ways to Conduct Business," AT&T Technology, vol. 6, No. 4, 1991 (A21713611).
- Gawronski, Jane Donnelly, et al., "Audio Response System to Practice Mental Computation Skills," Proceedings of the Digital Equipment Computer Users Society, vol. 1, No. 2, Fall 1974, pp. 633-636 (A21725979).
- Gawrys, G. W., "ISDN: Integrated Network/Premises Solutions for Customer Needs," IEEE, 1986, pp. 1.1.1-1.1.5 (A21725555).
- Gaylord, D. M., "Better Health for Hospitals with DIMENSION 2000 PBX," Bell Laboratories Record, Jul.-Aug. 1981, pp. 170-173 (A21724371).
- Gerald, Jeannette A., "A Voice Response System for General Aviation Pilots," Article Source Unknown (A21708877).
- Gibson, Stanley, "Audix Upgrades Include Messaging, Billing, Management," Computerworld, Dec. 15, 1986, p. 29 (A21707568).
- Gibson, Stanley, "Octel Links Voice Mail System to Rolm PBX," Computerworld, Dec. 8, 1986, p. 42 (A21707564).
- Gillon, A. C., et al., "Voice Power Gives You Voice Messaging—And Then Some," AT&T Technology, vol. 4, No. 2, 1989 (A21712712) repeated (A21724818).
- Gitten, L. J., et al., "5ESS System Evolution," ISS Florence, Session 41 A, Paper 1, May 1984 (A21725543).
- Goecke, D., et al., "A Software Engineering Approach Applied to the Complete Design and Production Process of Large Communication Systems Software," ISS '84 Florence, Session 13 C, Paper 1, May 1984.
- Goldstein, Mark L., "Send A Message. Now! New Digital Networks Can Give Companies a Competitive Edge," Industry Week, Jul. 21, 1986, p. 43 (A21706347).
- "Gotcha!," Edited by John A. Conway, Forbes, Mar. 10, 1986, p. 9 (A21708345).

US 6,434,223 B2

Page 16

- Gottlieb, Dan, "Does the Bell Toll for Voice/Data Independents?", Purchasing, Dec. 13, 1984, pp. 103-108 (A21724641).
- Grau, Jeff, "IBM Hints at Entering Voice Response Market in 1992," Article Source Unknown, Dec. 11, 1990 (A01346366).
- Greene, James E., et al., "Voice Response System Sticks to the Script and Saves Time, Money and Tempers for University Students and Administrators," Communication Age, Jan. 1986 (A21724080).
- Grumhaus, Audrey, "What's New in Telephone Service: Some Bad News for Nuisance Callers," The New York Times, Nov. 16, 1986 (A21725855) repeated (A21725857).
- Grunbaum, Rami, "Genesis Electronics Heeds the Voice Mail Calling," The Business Journal—Sacramento, vol. 2, No. 49, Mar. 10, 1986 (A21708341).
- Gunderson, Gary W., "Computer Consoles; Can Your Community Save Lives when Seconds Count?," Business Wire, Feb. 11, 1987 (A21707785).
- Hafner, Katherine, "Hello Voice Mail, Goodbye Message Slips," Business Week, Jun. 16, 1986 (A21708507).
- Hafner, Katherine, "System 85 Targets Leading-Edge Users: NBI," Computerworld, Sep. 5, 1983, p. 53 (A21724580).
- Hafner, Katherine, "Temporary Telephones," Network World, May 2, 1984 (A21708739).
- Hafner, Katherine, "The Venture Capital Adventure," Network World, Aug. 1, 1984 (A21708837).
- Hamel, Bob, "Voice Messaging; VMX Gives Firms Edge," Network World, Mar. 16, 1987 (A21707864).
- Hanson, Robert J., "The DSC-2000 VoiceServer System," Speech Technology, Aug.-Sep. 1984, pp. 55-65 (A21708818).
- Herits, E., et al., "A New Look for the White Pages," Bell Laboratories Record, Jun. 1980 (A21709547).
- Hardy, James O., et al., "Handling Coin Toll Calls—Automatically," Bell Laboratories Record, Sep. 1980, pp. 256-262 (A21710422).
- Harrar, George, "Interview: Ed Landry; Making Office Connections at John Hancock," Computerworld, Apr. 14, 1986, p. 63 (A21708404).
- Hasui, Kouya, et al., "Man-Machine Interfaces in Office Communication Systems," IEEE Communications Magazine, vol. 24, No. 7, Jul. 1986, pp. 18-23 (A03701435).
- Coover, Edwin R., "Voice-Data Integration in the Office: A PBX Approach," IEEE Communications Magazine, vol. 24, No. 7, Jul. 1986, pp. 24-29 (A03701442).
- Haszto, E. D., et al., "ALLIANCE Teleconferencing Services Boost Business Efficiency," AT&T Technology, vol. 3, No. 1, 1988 (A21724796).
- Heberle, W., "Accumulation of the Signals when Using the Pushbutton Telephone for Data Entry," Proceedings of the 5th International Symposium on Human Factors in Telecommunications, Sep. 1970 (A21725766).
- Heffron, W. G., et al., "Transaction Network Service," The Bell System Technical Journal, vol. 57, No. 10, Dec. 1978, pp. 3331-3347 (A21725986).
- Henricks, Mark, "DSC Makes Japanese Connection," Dallas-Fort Worth Business Journal, vol. 9, No. 30, Mar. 17, 1986 (A21708347).
- Hillhouse, Joseph, "PABX, the Hub: Keeping Communications on Track," Computer Decisions, vol. 16, Nov. 15, 1984, p. 84 (A21708974).
- Hindlin, Eric, "PBXs Becoming Practical Alternative to LANs," PC Week, vol. 4, Mar. 17, 1987, p. C16 (A21707870).
- Hird, E. V., "Party Line Cost Cutters," Telephone Engineer & Management, vol. 90, May 1, 1986, p. 51 (A21708442).
- Hollitz, John, "Giving Information without Human Intervention," The Business Journal—Sacramento, vol. 3, No. 26, Section 1, Sep. 29, 1986, p. 25 (A21706505).
- "Home Shopping Network Halts Talks," The Washington Post, Feb. 19, 1987 (A21707804).
- "The HORIZON Call Management System Tackles High Call Volume Demands," Telecommunications Product Review, Jan. 1983 (A21724553).
- Horton, L. A., et al., "AT&T Systems Link the University of Maryland," AT&T Technology, vol. 7, No. 2, 1992 (A21712897) repeated (A21725512).
- Horwitt, Elisabeth, "AT&T Enhancements Fill Gaps in System 75 Digital PBX," Computerworld, Jun. 16, 1986 (A21708505).
- Horwitt, Elisabeth, "Rolm to Unveil Low-End PBX: Digital System Bucks Feature-Rich Trend," Computerworld, Jun. 2, 1986, p. 8 (A21708489).
- Howitt, Doran, "Boom For Voice Mail Systems," InfoWorld, Oct. 29, 1984, pp. 37-38 (A21708940).
- Hubbard, Thomas Leo, "Richardson: High-Tech Prosperity," Dallas Magazine, vol. 66, No. 2, Feb. 1987 (A21707741).
- Huber, K. M., et al., "Getting the Message with UMS," AT&T Technology, vol. 1, No. 1, 1986 (A21708123).
- Swann, L., "Universal Operations Systems—Integrated Building Blocks," AT&T Technology, vol. 1, No. 1, 1986 (A21708141).
- Hunter, John J., "Telephone Tag Alternative: Voice Messaging Unshackles Users from Traditional Telephone Limitations," Network World, Jul. 13, 1987 (A21714278).
- Hutchins, Dexter, "The Legal Battles Over Voice Messaging," Fortune, Oct. 28, 1985 p. 104 (A21708066).
- "IBM Gives Voice to PS/2, RS/5000 Platforms," Voice Processing Newsletter, vol. 10, No. 22, Aug. 1, 1991 (A01346371).
- "IBM Introduces 2 Phone Systems," The New York Times, Date Unknown (A01346365).
- "IBM, Inventor Reach Patent Agreement," The Washington Post, Aug. 30, 1985 (A21707976).
- "IBM Reaches Patent Agreement with Inventor," U.P.I., Aug. 29, 1985 (A21707974).
- "IBM-Rolm Eye CBX-SNA Link," Computerworld, Jan. 5, 1987 (A21707572).
- "IBM Says New Line of Big Computers is Faster than Promised," Wall Street Journal, Date Unknown (A10346364).
- "ICA Slates Huge Meeting, Exhibit; Includes Program and List of Exhibitors," Telephone Engineer & Management, vol. 88, Apr. 15, 1984, p. 96 (A21708657).
- IEEE Transactions on Consumer Electronics, vol. CE-25, No. 3, Jul. 1979 (A21725141).
- "Index to Theses," Edited by Geoffrey M. Paterson, et al., vol. XXVI, Part. 1, 1977 (A21718028).
- "Industry Leaders License Katz Interactive Technology Patents," PR Newswire, Sep. 25, 1995 (A01331383).
- Press Release, Communications Daily, vol. 5, No. 126, Jun. 28, 1985, p. 5 (A21724661).
- "Inside an Internetworking Voice-Mail Processor," Data Communications, Oct. 1986, p. 158 (A21706523).

US 6,434,223 B2

Page 17

- "Integratec's Niche is Collecting on Delinquent Bank Card Accounts," American Banker, Aug. 10, 1988, p. 22 (A21724771).
- "Card Titan Sees Gold in Electronic Commerce," Financial Service Online, Jul. 1996, p. 8 (A21724775).
- "International Communications Network Service Installed by Commercial Cable," The Magazine of Bank Management, Jun. 1984, p. 126 (A21708770).
- "International Information Network Acquisition," PR Newswire, Nov. 7, 1985 (A21708093).
- "International Information Network Agreement," PR Newswire, Dec. 16, 1985 (A21708117).
- "International Information Network Announces Agreements," PR Newswire, Feb. 12, 1986 (A21708309).
- International Information Network Contract, Article Source Unknown, Feb. 25, 1986 (A21708312).
- "International Information Network Earnings," PR Newswire, Dec. 9, 1985 (A21708110).
- "International Information Sets Financing Program," PR Newswire, Oct. 22, 1985 (A21708064).
- Press Release, Communications Daily, vol. 6, No. 41, Mar. 3, 1986, p. 11 (A21708337) repeated (A21706387).
- "Megaphone Intl Wins Calif. Lottery Contract," PR Newswire, Aug. 4, 1986 (A21706387).
- "Introducing Voice Quote," The Washington Post, Oct. 9, 1986 (A21707805).
- Press Release, Communications Daily, vol. 6, No. 189, Sep. 30, 1986, p. 7 (A21706510).
- Press Release, Communications Daily, vol. 6, No. 189, Sep. 30, 1986 (A21706511).
- Jenkins, Avery, "Iowa State Launching Campus Wide Network," PC Week, vol. 4, Feb. 3, 1987, p. C14 (A21707767).
- Jerman, Max, et al., "A CAI Program for the Home," Educational Technology, Dec. 1971, p. 49 (A21725984).
- Johnson, Eric, "Analysts Say that Voice-Message Will Talk up \$1 Billion," Data Communications, Jan. 1984, p. 50 (A21708551).
- Johnson, J. W., et al., "Integrated Digital Services on the 5ESS™ System," ISS '84 Florence, May 1984, Session 14 A, Paper 3, Pages 1-8 (A21725525).
- Johnston, David, "'Pay Radio' Tunes in Charities, Turns off Some Consumer Groups," Los Angeles Times, Part 6, Aug. 24, 1986, p. 1 (A21706399).
- Excerpt from Journal of Information Processing Society of Japan (in Japanese), vol. 23, 1981 (A21724246).
- Excerpt from Journal of the Institute of Electronics and Communication Engineers of Japan (in Japanese), vol. 60, No. 10, 1977 (A21725080).
- Kaplan, Jeffrey M., "4th Generation Lacking," Network World, Oct. 6, 1986, p. 38 (A21706646).
- Kaplan, Jeff, "The Uncertain Future of Centrex," Network World, Mar. 14, 1984, p. 17 (A21708640).
- Karpinski, Richard, "IBM Offers Voice Processing Line," Telephony, Aug. 5, 1991 (A01346377).
- "Katz Scratch Fever," Telemedia News and Views, Date Unknown (A01331216).
- Katzel, Jeanine, "Selecting and Installing a Plant PBX System," Plant Engineering, vol. 37, Mar. 3, 1983 (A21713341).
- Kawakami, Tokuhiro, et al., "Speaker Independent Speech Recognition and Audio Response System and Facsimile Response System," NEC Technical Journal, vol. 39, No. 7, 1986, pp. 54-79 (A21708159).
- Kelleher, Joanne, "Users; Mastering DEC," Computerworld Extra!, Sep. 24, 1986, p. 61 (A21706475).
- Kemezis, Paul, "The Shared Tenant-Services Debacle and Lessons from it" Data Communications, Sep. 1986, p. 94 (A21706444).
- Koike, H., et al., "An Office-Use Voice Storage System with Elaborate User's Operativity," Proceedings of the Tenth International Symposium on Human Factors in Telecommunications, Jun. 1983, pp. 197-203 (A21725793).
- Koike, Tsunehiko, et al., "Parco-Type Audio Response Unit (in Japanese)," Article Source Unknown (A21724841).
- "Kokusai Voicemail to Start International Voicemail Service," COMLINE Daily News Telecommunications, Mar. 10, 1987 (A21707861).
- Kolodziej, Stan, "Where is the Electronic Messaging Explosion?" Computer World, Oct. 16, 1985, p. 21 (A21708056).
- Korzeniowski, Paul, "Voice Messaging; ETS Demise Hits Rolm, Octel Users," Network World, Aug. 4, 1986, p. 1 (A21706390).
- Kylin, J. C. et al., "Benefits of Integrating Data Bases into the SPC Network," ICC '79 Conference Record, vol. 1, Jun. 1979 (A21726001).
- Lawson, Michael, "AT&T Leaves 'Super-PBX' money on the table for Northern Telecom," Data Communications, Sep. 1987 (A21712210).
- Lazarus, George, "Pepsi Also Won the Super Bowl," Chicago Tribune, Jan. 30, 1987 (A21707647).
- Lee, Linda, et al., "Meridian SL Information Services," Telesis, 1985, pp. 13-19.
- Leibowitz, Ed, "The Wonder Years: Intriguing ACD Trends for the 1990s," Teleconnect, vol. 8, No. 4, Apr. 1990, p. 84 (A21712064).
- Levin, David, "Private Branch Exchanges: The Best Time to Shop Might Be Right Now," Data Communications, Aug. 1987, p. 100 (A21714315).
- Lineback, J. Robert, "VMX Girds for a Fight in Market it Pioneered," Electronics, May 12, 1986 pp. 55-56 (A21708453).
- Lukeson, David R., "CLASS: The Smart Local Telephone Network," Proceedings of the International Congress on Technology and Technology Exchange, Oct. 1984, pp. 100-103 (A21725864).
- "The LUMA Visual Telephone," Telecommunications Product Review, vol. 13, No. 7, Jul. 1986 (A21706313).
- Lyman, Guy C., III, "Voice Messaging Comes of Age," Speech Technology, Aug.-Sep. 1984, pp. 45-49 (A21724634).
- Mankin, Eric, "Playing TV Telephone: New System Opens Door for Audience Participation," Electronic Media, Apr. 24, 1989 (A01331389).
- Marino, P. J., et al., "AT&T Communications ISDN Plans," IEEE, 1985, pp. 247-251 (A21723894) repeated (A21725560).
- "Marubeni to Install Voice-Box-Mail System," Japan Economic Journal, Mar. 13, 1984, p. 9 (A21708639).
- Mason, G. C. W., "Use of Recorded Announcements for Guidance of Users of Telecommunications Networks," Proceedings of the Eighth International Symposium on Human Factors in Telecommunications, Sep. 1977, pp. 257-262 (A21725784).
- Massey, David K., "Voicetek Hears Sweet Success with Market Strategy," Boston Business Journal, vol. 7, No. 21, Section 1, Jul. 20, 1987, p. 6 (A21714290).

US 6,434,223 B2

Page 18

- "The Master of Trivia," The Sporting News, Aug. 19, 1985 (A21706671).
- Matheson, David, "ISDN: The Technology has Discovered its Purpose," Telemarketing, May 1990 (A40002414).
- Maxemchuk, N. F., "An Experimental Speech Storage and Editing Facility," The Bell System Technical Journal, vol. 59, No. 8, Oct. 1980 (A21724241).
- Mearns, Allison B., et al., "Calling Card—Don't Tell It—Dial It," Bell Laboratories Record, May–Jun. 1982, pp. 117–119 (A21709811) repeated (A21709808).
- Michaelson, Marlene, "Business, Services Use 'Dial A' Formats," Contra Costa Times, Sep. 8, 1986 (A21707858).
- Mier, Edwin E., "A Big Bonanza in Little Switches," Data Communications, Jun. 1984, p. 68 (A21708764).
- Miles, J. B., "AT&T System Upstages its FTS Rivals at Shows; The FTS 2000 Telecommunications Contract," Government Computer News, vol. 6, No. 4, Feb. 27, 1987, p. 1 (A21707808).
- Miles, J. B., "Bypass Starts to Soar; More Businesses are Avoiding the Public Phone Network as New Technologies Surface and Telecomm Costs Rise," Computer Decisions, vol. 17, Nov. 5, 1985, p. 82 (A21708087).
- Miles, J. B., "Network Control Under Control; Corporations Seeking Unified Network Management Systems May Find Hope in Several New Offerings," Computer Decisions, vol. 18, Jul. 15, 1986, p. 70 (A21706340).
- Excerpt from Modern Office Technology, Jul. 1986 (A21706315).
- Moore, Steve, "Project Management; Anatomy of a Cutover, Part 1" Network World, Aug. 25, 1986, p. 26 (A21706408).
- Moore, Steve, "Project Management; Anatomy of a Cutover, Part 2" Network World, Sep. 1, 1986, p. 35 (A21706447). Press Release, Data Communications, Aug. 1984, p. 58 (A21708825).
- "MTV-Networks Signs with American Express Affiliate FDR Interactive Technologies," Business Wire, Mar. 28, 1989 (A01331393).
- "NAB in the 'Big D,'" Broadcasting, vol. 112, Mar. 30, 1987, p. 83 (A21707892).
- "National Railways' Seat Reservation System by Touch Tone Telephone," Electrical Communication Facilities, vol. 38, No. 339, 1975 (A21724984).
- "Newly Formed company Assigned Several Interactive Technology Patents Following the Settlement of Multimillion Dollar Patent Lawsuit," Business Wire, Oct. 17, 1994 (A01331386).
- "New AT&T Device Made in Columbus," Columbus Citizen Journal, Sep. 7, 1985 (A01354693).
- "New Products Telecommunications," Sound & Communications, vol. 28, No. 12, Apr. 1983, pp. 84–85 (A21713354).
- "New Systems Stem Losses from Credit Card Debt; Technology Streamlines Phone Contacts," American Banker, Aug. 10, 1988 (A21724777).
- "New Voice Processing Products Mean Improved Customer Service," Article Source Unknown, (A01346357).
- Newton, Harry, "AT&T Information Systems One Year Later," Office Administration and Automation, vol. 45, Jan. 1984, p. 37 (A21708557).
- Newton, Harry, "Dumb Smart Switches," Teleconnect, May 1991, pp. 14–18.
- Newton, Harry, et al., "Send Us Your Pre-1989 Brochures," Computer Telephony, Oct. 1996, pp. 16–26 (A01331210).
- Nishikado, Iwamasa, et al., "Voice Storage System for Centralized Extension System," Review of the Electrical Communication Laboratories, vol. 32, No. 6, 1984, pp. 1010–1018 (A21725924).
- Press Release, The American Banker, Oct. 20, 1986, p. 13 (A21706658).
- "Northern–Telecom–2; (NT) Northern Telecom Announces Software Feature Package," Business Wire, Feb. 18, 1987 (A21707802).
- "No. Telecom Upgrades Digital PBX," Electronic News, vol. 30, Apr. 30, 1984, p. 63 (A21708708).
- Nowogrocki, Jim, "City, County Spend About \$1 Million on 911," St. Louis Business Journal, vol. 6, No. 43, Section 3, Aug. 4, 1986, p. 1C (A21706393).
- "Office Automation Advances 'White Collar' Productivity," Dun's Business Month, vol. 126, Mar. 1986, p. 59 (A21708336).
- The Official Proceedings of Speech Tech '85, Media Dimensions, Inc., Apr. 1985, Cover and General Information Pages.
- Excerpt in Japanese, Article Reference Unknown (A21724849).
- Press Release, PR Newswire, May 9, 1986 (A21708451).
- Paznik, Megan Jill, "Voice Mail: Pitfalls and Promises," Administrative Management, vol. 48, Mar. 1987, p. 16 (A21707849).
- "The PBX Marketplace; Private Branch Exchanges," Administrative Management, vol. 47, Jan. 1986, p. 45 (A21708194).
- "Peek at Future of 'General Hospital'" Times–Picayune, Date Unknown (A21708536).
- Pelline, Jeff, "AT&T System Links Voice to Computer," San Francisco Chronicle, Sep. 10, 1985 (A01354691).
- "Perception Technology; (PCEP) Perception Technology Announces ANI, DID Enhancements," Business Wire, Feb. 27, 1987 (A21707811).
- Petit J. C., et al., "GALAXIE: Toward Adaptive Distributed Control Systems," ISS '84 Florence, May 1984, Session 41 A, Paper 3.
- Petrosky, Mary, "Interactive Speech System From AT&T's Business Unit," Infoworld, vol. 7, Issue 38, Sep. 23, 1986 (A21708029).
- Pfister, George M., "The PBX: What Matters, What Doesn't," Datamation, vol. 30, Aug. 1, 1984, p. 121 (A21708831).
- Plakias, Mark, "The Katz that Ate the Canary," Telemedia News and Views, vol. 2, No. 11, Nov. 1994 (A01331037).
- Pollack, Andrew, "Autiotex: Data By Telephone," The New York Times, Jan. 5, 1984 (A21725850).
- Portaniere, Nick, "AT&T Introduces System 25 Digital PBX," Electronic News, Jul. 7, 1986, p. 34 (A21706324).
- Power of Attorney for USPA 5,109,404 Inventor Ronald A. Katz.
- Prell, E. M., et al., "The Changing Role of the Operator," International Switching Symposium, May 1979, pp. 697–703 (A21725933).
- Prince, Terry, et al., "A Telephone for the 'Checkless' Society," Bell Laboratories Record, Sep. 1972, pp. 249–253 (A21725647).
- "Profit from Impulse Pay-Per-View," Advertisement for Science Dynamics Corporation, Telephony, Jul. 14, 1986 (A21706337).
- "Prudential Insurance Mortgage by Phone Program," PR Newswire, Feb. 19, 1986 (A21708310).

US 6,434,223 B2

Page 19

- Pulford, Jack, "Aurora System is Built to Grow," Telephone Engineer & Management, vol. 88, Aug. 1, 1984, p. 78 (A21708841).
- Putnam, Jane, "Winners," Contra Costa Sun, Aug. 14, 1985 (A21706705).
- "Putting an End to Telephone Tag," ABA Banking Journal, Feb. 1987, (A21707747).
- Raack, G. A., et al., "Customer Control of Network Features," ISS '84 Florence, May 1984, Session 14 A, Paper 2 (A21725520) repeated (A21725717).
- Raimondi, Donna, "AT&T Debuts Primary Rate for System 85," Computerworld, Feb. 23, 1987, p. 41 (A21707806).
- Rappaport, David M., "Voice Mail: Key Tool or Costly Toy," Data Communications, Oct. 1986, p. 153 (A21706526).
- "Redwood by Rolm," Telecommunications Product Review, vol. 13, No. 6, Jun. 1986 (A21708487).
- Rees, Norm, "Flexible Voice Response Software Speeds Development for Resellers," Speech Technology, Mar.-Apr. 1988, pp. 46-49.
- Results of Lexis Search Request for "Call Interactive," Date of search Aug. 5, 1996 (A01331399).
- Rice, Valerie, "AT&T Enters Speech-Processing Business, Names First Customers," Investor's Daily, Sep. 10, 1985 (A01354684).
- Riederer, S. A., "Conversant VIS Means Business," AT&T Technology, vol. 5, No. 4 (A21711986).
- Rangnekar, S., et al., "AT&T Voice Mail Service," AT&T Technology, vol. 5, No. 4 (A21711992).
- "Ring System; Provides District of Columbia with Automatic Number and Location Identification to Aid in Emergency Services Response," Business Wire, Aug. 7, 1986 (A21706396).
- Press Release, PR Newswire, Mar. 3, 1986 (A21708338).
- Rippeau, Jane, "'Smart' Way to Get Message Across," Financial Times, Jun. 12, 1986 (A21708502).
- Rogers, Thomas, et al., "Scouting—A Worthwhile Trivial Pursuit," The New York Times, Aug. 9, 1985 (A21707968).
- "Rolm-Corp; Appoints Harvey and Zalisk as Vice President," Business Wire, May 21, 1986 (A21708472).
- "Rolm-corp; Introduces Redwood for Branch Offices and Small Businesses," Business Wire, Jun. 2, 1986 (A21708491).
- "Rolm; Links PhoneMail to IBM VM Host," Business Wire, May 5, 1986 (A21708447).
- "Rolm Releases Four-Channel Phonemail Voice Message Unit," Computerworld, Jan. 28, 1985.
- "Rolm; Rolm Announces PhoneMail Network," Business Wire, Feb. 9, 1987 (A21707775).
- "Rolm; Rolm Awarded Major contract by Columbia University," Business Wire, Mar. 2, 1987 (A21707855).
- "Rolm; Rolm CBX II 9000AE Offers Abundant System Power for Applications Growth," Business Wire, Feb. 3, 1987 (A21707765).
- "Rolm; 15-Node Rolm System to be Installed at University of Rochester," Business Wire, Nov. 11, 1985 (A21708096).
- Roman, David R., "Building Up Your Personal Computer; Part II: Data-Input Devices," Computer Decisions, vol. 16, Mar. 1984, p. 110 (A21708630).
- Rosenbaum, Art, "This 'Maniac' Spreads His Loot Around," San Francisco Chronicle, Jul. 24, 1986 (A21706875).
- Rosinski, R. R., "Uses of AT&T Speech Processing Technology," AT&T Technology, vol. 5, No. 4, Date Unknown, pp. 4-5 (A21723940).
- Ruhl, H. W., et al., "Sprein—A Voice I/O Mail Order System with Telephone Access," Article Source Unknown.
- Salter, Stephanie, "When the 'Say Hey Kid' Met the 'Say How' Bunch," San Francisco Examiner, Date Unknown (A21706704).
- Sanger, David E., "A Driving Force Leaves Rolm," The New York Times, Jan. 15, 1986 (A21708200).
- Press Release, PR Newswire, Sep. 17, 1985 (A21708022).
- Schindler, Paul E., Jr., "AT&T Talking up Conversant 1 Unit," Information Week, Sep. 16, 1985 (A21723912).
- Schinke, David, "Speaker Independent Recognition Applied to Telephone Access Information Systems," Speech Tech '86, 1986 (A21718178).
- Schulman, Henry, "AT&T Device: Talk to Computer By Phone," The Oakland Tribune, Sep. 10, 1985 (A01354685).
- Schumaker, Robert M., Jr., "Phone-Based Interfaces: Research and Guidelines," Proceedings of the Human Factors Society 36th Annual Meeting, 1992, pp. 1051-1055.
- Schwartz, Jeffrey, "IBM Enhances Voice Processing," Article Source Unknown (A01346375).
- Schwartz, P., et al., "JISTEL 500—Time Division Exchange Including Voice and Data with Voice Messaging," ISS '84 Florence, May 1984, Session 21 A, Paper 6, pp. 1-4.
- Scully, Sharon, "Product News; Saturn PBX Revamped," Network World, May 19, 1986, p. 4 (A21708470).
- Seaman, John, "Voice Mail: Is Anybody Listening?," Computer Decisions, vol. 16, May 1984, p. 174 (A21708731).
- "Select List of Telecommunications Providers," The Magazine of Bank Management, Aug. 1986, p. 32 (A21706373).
- Semilof, Margie, "High-End Voice/Data PBXs: Voicing Doubts about Data," Network World, Mar. 31, 1986, p. 65 (A21708354).
- "Senate Panel Meets Today; C&P Objects to House Decision Awarding Telephone Contract to AT&T-IS," Communications Daily, vol. 5, No. 238, Dec. 10, 1985, p. 4 (A21708112).
- Session No. 13—Contemporary Developments in Addressability and Pay-Per-View, Pay-Per-View Conference, Apr. 28, 1985, p. 21 (A21707196).
- Sharma, Ranjana, "PBX Users Benefit from Vitality of ACD Market," Network World, Oct. 17, 1988 (A21712686).
- Shaw, Peter, "The Need for BT's Managed Information Services," British Telecommunications Engineering, vol. 11, Apr. 1992, pp. 2-6.
- Shepherd, John, et al., "Managed Recorded Information Services—An Overview," British Telecommunications Engineering, vol. 11, Apr. 1992, pp. 7-13.
- Shimizu, Hiroshi, "Advanced Credit Call Service," Japan Telecommunications Review, Oct. 1986, pp. 247-250.
- Press Release, PR Newswire, Dec. 5, 1985 (A21708108).
- Siragusa, Gail, "Voice Mail Takes Off: Send and Receive Messages by Phone," Administrative Management, vol. 47, Apr. 1986, p. 43 (A21708393).
- "Small Company Initial Public Offerings: Dec. 1983," Goldhirsch Group, Inc., Mar. 1984, p. 138 (A21708624).
- Smith, Tom, "Production Use of ISDN Lives up to Expectations," Network World, Feb. 26, 1990 (A21712004).
- Snow, Stephen A., "Consumers Show Strong Preference for Automated Telephone Call Processing," Business Wire, Oct. 19, 1988 (A21724781).
- "AT&T to Offer New Service," Reuter Newswire, Nov. 21, 1988 (A21724788).
- "Soap Opera Updates Now Available in Area," Contra Costa Times/TV, May 28, 1984, p. 4 (A21708748).

US 6,434,223 B2

Page 20

- "Something for Everyone at NAB's Equipment Exhibition," Broadcasting, vol. 112, Mar. 23, 1987, p. 63 (A21707873).
- Song, D, et al., "System 12 Line and Trunk Testing," ISS Florence, May 1984, Session 32 A, Paper 5, p. 1.
- "Special Information Tones Provide Computer with Vital Call Data," Bell Laboratories Record, Nov. 1981 (A21710768).
- Staehler, R. E., "Toward a More Automated Network—TSPS Enhancements Lead the Way," Telephony, Feb. 8, 1982, pp. 45–48 (A21725941).
- "The Stamp of Approval for Voicemail," Article Source Unknown, (A21707760).
- Stern, Aimee, "Cable Operators Fight Back; Pay-Per-View TV," Dun's Business Month, vol. 129, Feb. 1987 (A21707748).
- Stewart, Alan, "Signaling Changes for Interconnects; NATA 86 Trade Show," Telephone Engineer and Management, Vol. 90, Dec. 15, 1986, p. 72 (A21707569).
- Stix, Gary, "Many Bands = Light Work," Computer Decisions, vol. 17, Sep. 10, 1985, p. 92 (A21708015).
- Press Release, Communications Daily, vol. 5, No. 148, Jul. 31, 1985, p. 7 (A21708033) repeated (A21724666).
- "International Information Network Earnings," PR Newswire, Sep. 30, 1985 (A21708033) repeated (A21724666).
- "International Information Sets Financing Program," PR Newswire, Oct. 22, 1985 (A21708034) repeated (A21724667).
- Stoffels, Bob, "REA Takes its Show on the Road: Engineering and Management Seminars," Telephone Engineer & Management, vol. 88, May 15, 1984, p. 129 (A21708746).
- "Strike Three," S. F. Progress, Aug. 7, 1985 (A21706708).
- Strom, David, "Telephone or MIS Managers: Who Flips the PBX Switch; Management and Use of New Communications Technology; Connectivity—Focus on LANs," PC Week, vol. 4, Feb. 17, 1987, p. C1 (A21707798).
- Sullivan, Linda, "Ameritech Services Signs Leading National Information Provider as a Master Dealer," Business Wire, Sep. 25, 1989 (A21724794).
- Susca, Paul, "Telemarketing: Reach Out and Sell Someone," Network World, May 4, 1987 (A21714122).
- Swan, Gary E., "Gift to Kids Wasted if Ballplayers Strike," San Francisco Chronicle, Date Unknown (A21706673).
- "System 85 Voice Messaging Due in '85," Data Communications, Dec. 1984, p. 204 (A21709005).
- Tagg, Ed, "Automating Operator-Assisted Calls Using Voice Recognition," Speech Technology, Mar.–Apr. 1988, pp. 22–25.
- Takahashi, Y., "Technique to Use Chinese Letters for the On-Line System in Marketing Business," Packaging Technology, vol. 19, No. 11, 1981 (A21724264).
- Talmadge, Candace, "MetroCal Dumps Richards for K-C," Adweek, Jan. 5, 1987 (A21707728).
- "Tech Deals," Phillips Business Information, vol. 7, No. 120, Jun. 25, 1996 (A01331382).
- Telecommunication Technology, vol. 4, No. 4, Apr. 1986, p. 68 (A21724070).
- "'Teleguide' Network Gives Tourists the Answers," ComputerData, Apr. 1983 (A21724569).
- "Telephone Service Offers the Latest News on the Soaps," Augusta, GA Chronicle–Herald, Jul. 28, 1984 (A21724626).
- Telephony, Sep. 29, 1980 (A21716447).
- "Test Your Baseball I. Q. and Win Four Tickets to All-Star Workout Day," Contra Costa Times, Date Unknown (A21706787).
- Tetschner, Walt, "PC-Based Voice Processing Software Tools," Speech Technology, Mar.–Apr. 1988, pp. 42–45.
- Tetschner, Walt, "The Voicetek VTK 90 Voice Computer," Speech Technology, Mar.–Apr. 1987, pp. 102–106.
- "They've Got Your Number in AT&T's first Primary-Rate Test," Data Communications, Feb. 1988, p. 15 (A21712494).
- "Toshiba Telecom Introduces Universal Instrumentation for Entire Line of Key and PBX Systems," Telecommunications Product Review, vol. 11, No. 2, Feb. 1984 (A21708573).
- "Tracking the Trucks," Network World, Sep. 5, 1984, p. 55 (A21708897).
- Excerpt from Transportation Technology (in Japanese), vol. 30, No. 7, 1975 (A21725045).
- "Trivia Promo Chips Away for Frito-Lay," Advertising Age, Date Unknown (A21707650).
- "Trivial Tickets," The fort Wayne Journal–Gazette, Aug. 11, 1985 (A21706713).
- "Two Firms Introduce FMS Products," Energy User News, vol. 9, Aug. 6, 1984, p. 12 (A21708848).
- Tyson, David O., "Voice Mail Technology Streamlines Bank Telephone Messaging Services," The American Banker, Oct. 15, 1986, p. 13 (A21706655).
- Upton, Molly, "No Clear Winner in War of Mails," Computerworld, May 19, 1986, p. 60 (A21708459).
- Vanandell, M. A., "While You're Away, AUDIX Will Answer," AT&T Technology, vol. 3, No. 3, 1988 (A21724808).
- "Vendor Support Eases GOP Costs," Computerworld, Aug. 27, 1984 (A21708865).
- "View from Silicon Valley: Silicon Valley Companies Battle for Advantage, Compatibility," Communications Daily, vol. 4, No. 90, May 8, 1984, p. 1 (A21708743).
- Virzi, Robert A., "Skip and Scan Telephone Menus: User Performance as a Function of Experience," Proceedings of the Human Factors Society 36th Annual Meeting–1992, p. 211–215.
- Vizcarrondo, John, et al., "HOBIS: New Designs on Hotel Billing," Bell Laboratories Record, Jan. 1980 (A21709392).
- "VMX Announces InfoLink: New capability in Voice Messaging Arena," Business Wire, Jun. 16, 1987 (A21714159).
- "VMX/Honeywell; (VMXI) (HON) Take Voice Messaging 'Down Under' After Signing Distribution/OEM Agreement for Australia and Pacific Basin," Business Wire, Sep. 3, 1986 (A21724699) repeated (A21706451).
- "VMX, Inc. Adds Internal Revenue Service to Voice Message (SM) Users," Southwest Newswire, Feb. 8, 1984 (A21708587).
- "VMX, Inc. Announces Another Good Quarter," Southwest Newswire, Aug. 1, 1984 (A21708846).
- "VMX, Inc. Announces First Quarter Results," Southwest Newswire, Oct. 18, 1985 (A21708063).
- "VMX, Inc. Announces Landmark Approval of first Voice Message System in Japan," Southwest Newswire, Jun. 1, 1984 (A21708776).
- "VMX; (VMXI) AT&T Tops List of Seven License Agreements Granted in Third Quarter," Business Wire, Sep. 9, 1986 (A21706457).
- "VMX-Inc; (VMXI) Hosts First International Networking Seminar," Business Wire, Jul. 18, 1986 (A21706345).
- "VMX, Inc. Provides First Voice Message (SM) Systems to Three Bell Operating Companies," Southwest Newswire, Dec. 11, 1984 (A2109007).

US 6,434,223 B2

Page 21

- "VMX, Inc. Releases Audited Fiscal 1984 Financials—It was a Very Good Year," Southwest Newswire, Aug. 7, 1984 (A21708852).
- "VMX; (VMXI) Voice Messaging Leader VMX, Inc. Launches New Generation Technology with VMX(R) 5000 Series," Business Wire, Oct. 7, 1986 (A21706650).
- "VMX; (VMXI) Voice Messaging Patent-Holder VMX Inc. Moves into France after Signing Distribution Agreement with Jeumont-Schneider," Business Wire, Sep. 15, 1986 (A21706459).
- "VMX; (VMXI) VMX 5000 Series Voice Messaging System Scores High Sales During First Quarter," Business Wire, Mar. 10, 1987 (A21707862).
- Press Release, Communications Daily, vol. 4, No. 209, Oct. 26, 1984, p. 6 (A21708939).
- Press Release, Computerworld, Oct. 7, 1985, p. 68 (A21708055).
- Press Release, PR Newswire, Jan. 18, 1984 (A21708570).
- Press Release, PR Newswire, Apr. 10, 1984 (A21708655).
- Press Release, PR Newswire, Oct. 16, 1984 (A21708935).
- Press Release, PR Newswire, Jan. 24, 1986 (A21708207).
- Voice Mail Brochure, Radio-Suisse Ltd., Date Unknown (W70172).
- "Voice Messaging Capability from VMX," The Magazine of Bank Management, Oct. 1985, p. 86 (A21708037).
- Voice Processing International Conference Program, Jul. 1986 (A21723351).
- Voice Processing—The New Revolution, Proceedings of the International Conference, Jul. 1986 (A21722980).
- "Voice '92," Conference Information and Program, 1992 (W11651).
- "Voice System Tunes up Automaker's Communications," Computerworld, Nov. 12, 1984, p. 35 (A21708972).
- Press Release, Communications Daily, vol. 4, No. 110, Jun. 6, 1984, p. 9 (A21708778).
- "Votrax Announces Centrum 9000, Model 5," Source Unknown, Oct. 16, 1987 (A21724763).
- Waite, Andrew J., "Applying IVR Systems," Inbound/Outbound, Sep. 1988, pp. 30–39 (A21725733).
- Walker, Murt, "CCS7 Offers New Paths to Revenue Generating Services," AT&T Technology, vol. 6, No. 2, 1991, pp. 8–19 (A21713600).
- Wallace, Bob, "All Voice Systems Are Not Alike," Network World, Sep. 14, 1987 (A21712240).
- Wallace, Bob, "Comnet '87; AT&T Announces ISDN Interface for System 85," Feb. 16, 1987 (A21707796).
- Walters, R. E., et al., "Voice Processing Systems in British Telecom," British Telecommunications Engineering, vol. 9, Jul. 1990, pp. 88–97.
- Warner, Edward, "Bank's Speech Synthesizers Greet Financiers' Calls with Daily Balance," Computerworld, Oct. 22, 1984, p. 6 (A21708937).
- Watt, Peggy, "Local Phone Companies Eyeing Market for Voice Mail Services," Computerworld, Mar. 24, 1986, p. 23 (A21708350).
- Watt, Peggy, "Republicans Ready for High-Tech: GOP Convention will Feature Voice Message System," InfoWorld, Aug. 27, 1984 (A21708862).
- Weinstein, Bob, "Stock Exchange Gets News by Phone," Inbound/Outbound, Oct. 1988, pp. 39–46 (A21725744).
- Weinstein, Bob, "Stopping the Broker's Bottleneck," Inbound/Outbound, Nov. 1988, pp. 22–23 (A21725753).
- West Interactive Settles with FDR: Patent Suit Settlement Could Have major Industry Impact, Enterprise Communications, Nov. 1994 (A01331040).
- Whalen, Bernie, "Marketers Expand Applications of Dial-It 900 Technology," Marketing News, Nov. 26, 1982 (A21725861).
- "What's An 'Automated' Attendant," Inbound/Outbound, Jul. 1989, pp. 40–42 (A21724789).
- "Whether to Answer the Phone," The Washington Post, Dec. 7, 1986 (A21707563).
- Whitten, W. B., "Advanced Interfaces Speed Delivery of Services," AT&T Technologies, vol. 2 No. 3 (A21707593).
- "Who Switches Data Along with Voice? PBX Users, Increasingly," Data Communications, Feb. 1987, p. 77 (A21707751).
- Wilpon, Jay G., et al., "Speech Recognition: From the Laboratory to the Real World," AT&T Technical Journal, Sep.–Oct. 1990, pp. 14–24 (A21723481).
- Wise, Deborah C. "This Computer Even Deciphers Noo Yawk Talk," Business Week, Sep. 23, 1985, pp. 40–42 (A01354687).
- Witten, Ian H., "Making Computers Talk: An Introduction to Speech Synthesis," Prentice-Hall, 1986 (A21708148).
- Witten, Ian H., "Principles of Computer Speech," Academic Press, 1982 (A21709597).
- Wolfe, R. M., et al., "Telecommunications Data Base Application with the 3B™20 Processor," ISS '84 Florence, May 1984, Session 22 A, Paper 2 (A21725518).
- Wollenberg, Skip, "American Express Affiliate Plans Interactive Phone Service," The Associated Press, Jan. 19, 1989 (A01331396).
- Wong, Stephanie Lam, "Just a Phone Call Away," San Francisco Chronicle, Date Unknown (A21707649).
- Wood, Lamont, "Stretching the Workday; Corporate Users Find that Voice Mail Saves them Time in Transmitting Important Messages," Computer Decisions, vol. 18, Dec. 2, 1986, p. 44 (A21707561).
- Wood, Lamont, "Will New Alliances Forge Better Links? Private Branch Exchange Vendors Merge with Computer Firms," Computer Decisions, vol. 18, Jul. 29, 1986, p. 40 (A21706353).
- Worrall, D. P., "New Custom Calling Services," The Bell System Technical Journal, vol. 61, No. 5, May–Jun. 1982 pp. 821–839 (A21725897).
- "Worthwhile Trivia," The New York Times, Date Unknown (A21706711).
- "Yes! Songs For You," Advertisement, Source Unknown (W73764).
- Youngs, E. A., "The Changing Role of Human Factors Work Supporting New Telecommunications Products and Service," Proceedings of the Tenth International Symposium on Human Factors in Telecommunications, Jun. 1983 (A21725809).
- Youngs, E. A., "Effects of Automating Operator Services on Customers and Operations," Proceedings of the Eighth International Symposium on Human Factors in Telecommunications, Sep. 1977, pp. 251–255 (A21725776).
- "Zenith; Centel Plans Zenith Phonevision Pay-Per-View Cable TV System," Business Wire, Dec. 5, 1985 (A21708105).
- Zeno, Charlie, "Trivia Buff's Special Party for 678 Kids," Contra Costa Times, Date Unknown (A21706788).

US 6,434,223 B2Page 22

Zuckerman, Steve, "Ogilvy & Mather/Dallas Looks for Partner to Go After Bigger Accounts," Dallas Business Courier, vol. 2, No. 21, Sec. 1, Sep. 8, 1986, p. 12 (A21706454).
Complete Issue of Bell Labs News, vol. 21, No. 40, Oct. 5, 1981 (A21710762).
Complete Issue of Bell Labs News, vol. 25, No. 36, Sep. 30, 1985 (A21724662).
Complete Issue of Bell Labs News, vol. 26, No. 31, Aug. 18, 1986 (A21706398).
Complete Issue of Bell Labs News, vol. 27, No. 33, Aug. 17, 1989 (A21710741).
Bell of Pennsylvania Press Release, Mar. 13, 1984 (A21725876).
Dorros, Irwin et al., "Reaching into the Future with Stored Program Control," Bell Laboratories Record, Dec. 1980, pp. 387-393 (A21710507).
Complete Issue of Voice News, vol. 4, No. 9, Oct. 1984 (A21708913).
Complete Issue of Voice News, vol. 6, No. 7, Jul./Aug. 1986 (A21706303).
Complete Issue of Voice News, vol. 7, No. 2, Feb. 1987 (A21707730).
Complete Issue of Voice News, vol. 7, No. 3, Mar. 1987 (A21707834).

Complete Issue of Voice News, vol. 7, No. 5, May 1987 (A21714110).

Complete Issue of Voice News, vol. 7, No. 10, Oct. 1987 (A21724749).

* cited by examiner

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(57) ABSTRACT

For use with a public telephone network CO incorporating a vast number of terminals Ti-Tn, a system CS limits and controls interface access to implement voice-digital communication for statistical processing. The system CS accommodates calls in different modes, e.g. "800", "900" or area code and incorporates qualifying apparatus to restrict against caller misuse. Alternative calling modes are used to reach an interface facility that also affords some control based on calling terminal identification, e.g. as by ANI equipment.

107 Claims, 2 Drawing Sheets

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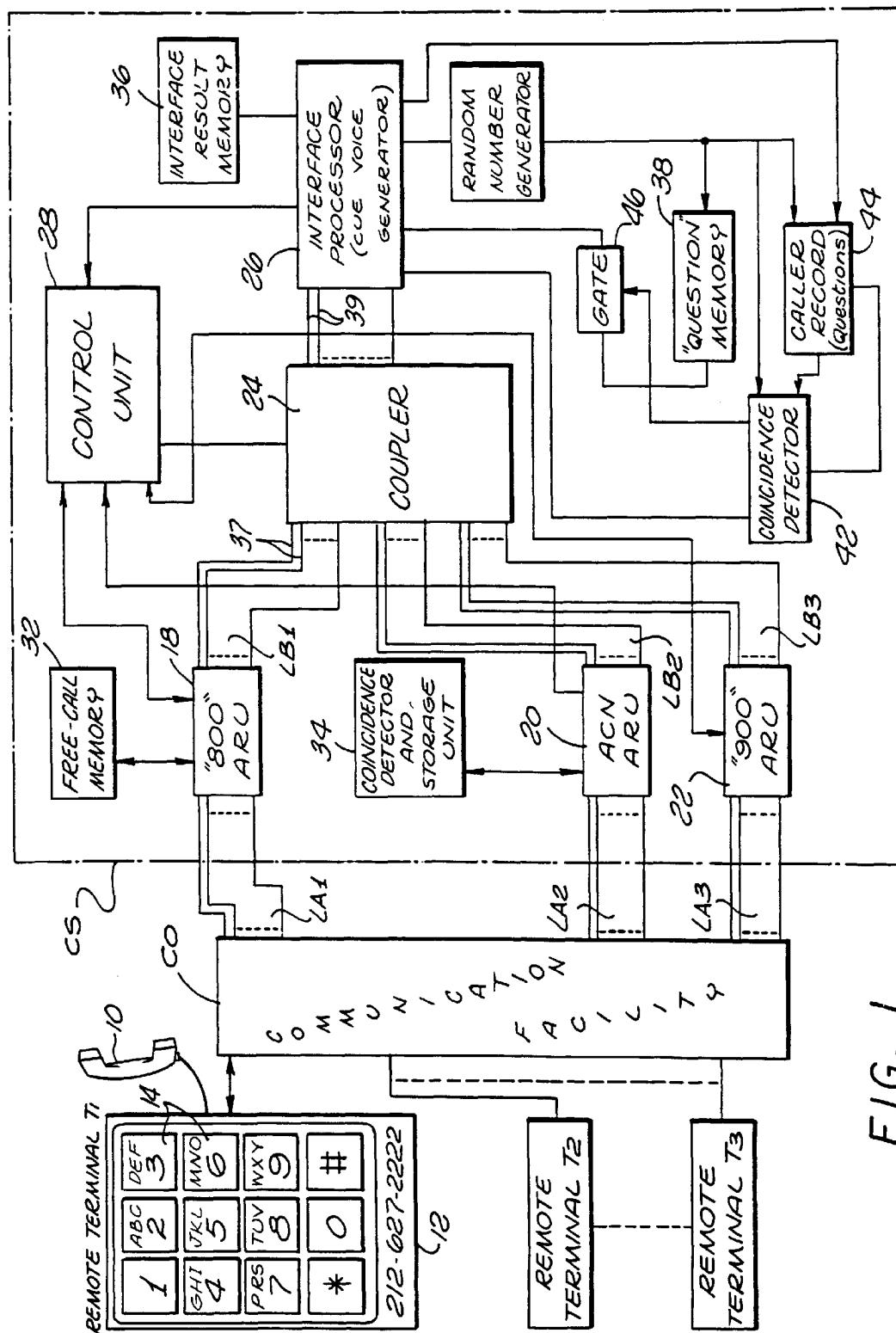


FIG. 1

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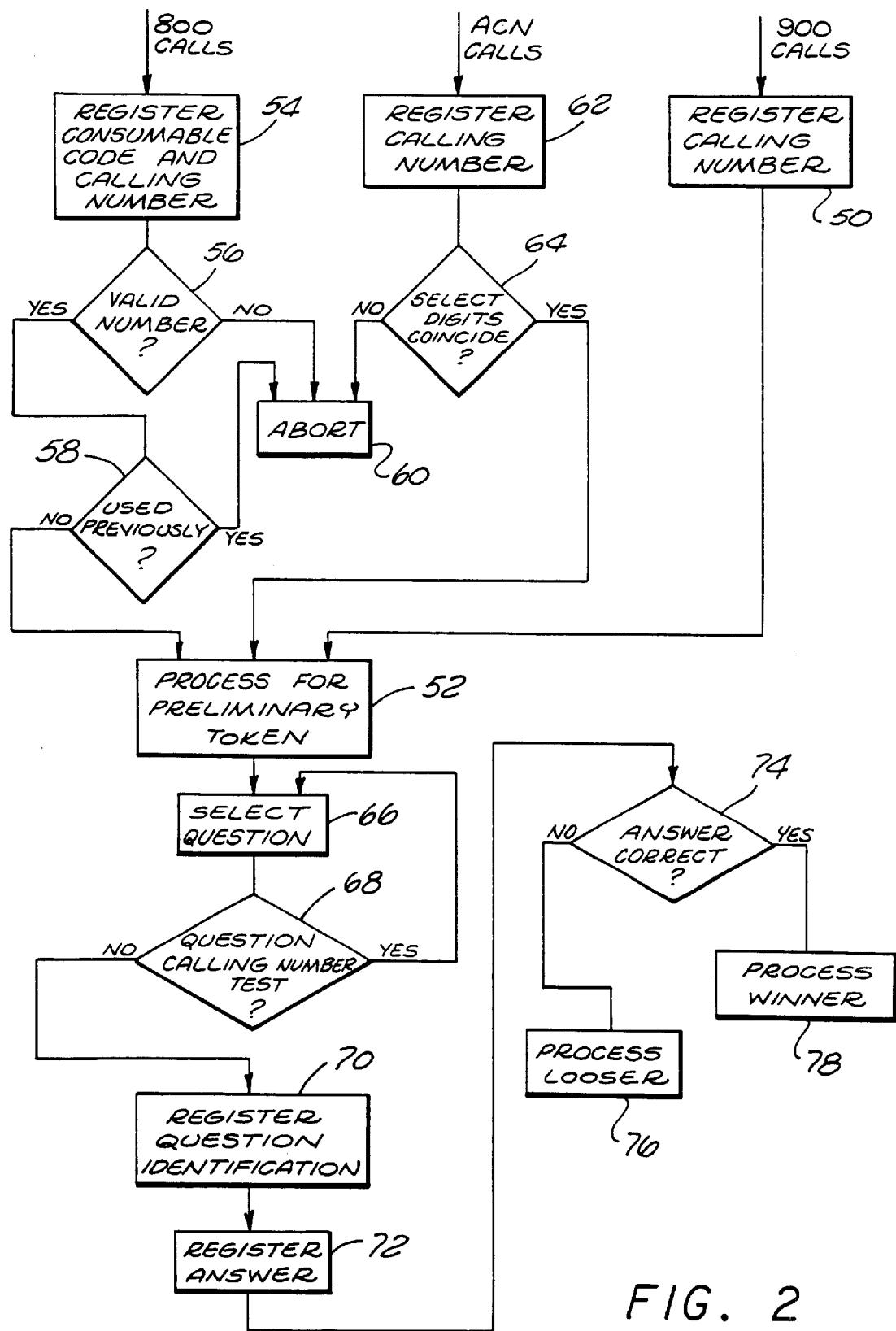


FIG. 2

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**TELEPHONE INTERFACE CALL
PROCESSING SYSTEM WITH CALL
SELECTIVITY**

RELATED SUBJECT MATTER

This is a continuation of application Serial No. 08/480, 185 filed on Jun. 7, 1995, now U.S. Pat. No. 5,974,120 and entitled "Telephone Interface Call Processing System With Call Selectivity," which is a continuation of application Ser. No. 08/132,062 filed on Oct. 4, 1993, and entitled "Telephone Interface Call Processing System With Call Selectivity," now U.S. Pat. No. 5,828,734, which is a continuation of application Ser. No. 07/779,762 filed on October 21, 1991, and entitled "Telephone Interface Call Processing System With Call Selectivity," now U.S. Pat. No. 5,251,252, which is a continuation of application Ser. No. 07/425,779 filed on Oct. 23, 1989, and entitled "Telephone Interface Call Processing System With Call Selectivity," now U.S. Pat. No. 5,128,984, which is a continuation-in-part of application Ser. No. 07/312,792 filed on Feb. 21, 1989, and entitled "Voice-Data Telephonic Control System," now U.S. Pat. No. 5,073,929, which was a continuation-in-part of application Ser. No. 07/194,258 filed on May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which was a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which was a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned.

Also, said application Ser. No. 08/132,062 is a continuation-in-part of application Ser. No. 08/306,751 filed on Sep. 14, 1994, and entitled "Multiple Format Telephonic Interface Control System," which is a continuation of application Ser. No. 08/047,241 filed on Apr. 13, 1993, and entitled "Multiple Format Telephonic Interface Control System," now U.S. Pat. No. 5,351,285, which is a continuation of application Ser. No. 07/509,691 filed on Apr. 16, 1990, and entitled "Multiple Format Telephonic Interface Control System," now abandoned and a continuation-in-part of application Ser. No. 07/640,337 filed on Jan. 11, 1991, now abandoned, and entitled "Telephonic-Interface Statistical Analysis System", which is a continuation of application Ser. No. 7/335,923 filed on Apr. 10, 1989, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 6,016,344, which is a continuation of application Ser. No. 07/194,258 filed on May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which is a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which is a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned, said application Ser. No. 07/509,691 filed on Apr. 16, 1990, now abandoned, is a continuation-in-part of application Ser. No. 07/260,104 filed on Oct. 20, 1988, and entitled "Telephonic Interface Control System," now U.S. Pat. No. 4,930,150, which is a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which is a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and

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entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned. Also, said application Ser. No. 08/132,062 is directly a continuation-in-part of application Ser. No. 07/335,923 filed on Apr. 10, 1989, now U.S. Pat. No. 6,016,344 and entitled "Telephonic-Interface Statistical Analysis System," which is a continuation of application Ser. No. 07/194,258 filed on May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which is a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which is a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned. The benefit of the earlier filing dates in the United States is claimed under 35 U.S.C. §120.

**BACKGROUND AND SUMMARY OF THE
INVENTION**

Recent years have seen a considerable growth in the use of telephonic communications. For example, in various applications, telecommunications applications have expanded to accommodate voice-digital interfaces between computer apparatus and callers at remote telephone terminals. For example, by actuating the push buttons at a remote telephone terminal, a caller controls a computer apparatus to provide various entertainment or information. In using such a system, a caller might telephone a financial service and selectively actuate the telephone key panel to receive information on specific stocks or bonds.

Digital interface systems also have been implemented to utilize digital signals provided independently of the caller's actions. For example, the so-called "ANI" telephone equipment provides digital signals indicating a caller's telephone number. Equipment designated "DNIS" is similarly available to indicate the called number. Thus, digital signals may be provided telephonically to a system associated with individual calling terminals as for identification or other use.

Telephonic games and contests are among the various applications that have been recognized for implementation with telephone interface systems. Such games and contests may be variously presented, as in cooperation with an advertising program for a product or in a lottery format. Generally with respect to such applications, various call modes might be utilized.

Essentially, three telephonic calling modes or services are in widespread use. Specifically, caller-charge or "900" service (including "976" calls) involves a charge to the caller for each call. The "900" calling mode is useful for implementing games and contests with telephone interface systems; however, certain problems are encountered. Specifically, certain telephone terminals, e.g. pay phones, do not accommodate "900" service. Also, with respect to certain forms of games and contests, it is important to offer members of the public an alternative "free" method of participation. In general, the system of the present invention may be employed to implement "900" calling modes while accommodating "free" participation with reasonable control.

Telephone calls may be accommodated without charge using "800" service or calling mode. Generally, the "800" calling mode accommodates free calls by callers in various areas to a particular station incurring the charges. In most applications, it is important to regulate the use of the "800"

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calling mode. Another calling mode is the traditional method of calling, involving area-code numbers which also includes calls placed within a given area code which do not usually involve a specific charge and usually do not require dialing the area code. One of the problems associated with using the area-code calling mode for interface systems is the vast number of calls. For example, even in association with an advertising campaign, inviting members of the general public to participate in a free contest or game by telephone may prompt an overwhelming response. Accordingly, a need exists for a practical system to control and limit calls to an interface service in the traditional free area-code number mode.

Another aspect of telephonic-interface contests involves zealous or obsessive participants. For example, in a quiz contest, a zealous person might call repeatedly, researching answers to given questions until ultimately a question is repeated. At that time, the caller is ready with an answer and has an unfair advantage in the contest. Thus, a need exists for control within the interface system.

In general, the system of the present invention involves a telephone call processing system for receiving calls from a multitude of terminals in different call modes and for processing calls, as to a game or contest format, with means to limit repeat-call advantages. In a disclosed form, the system implements three calling modes to facilitate various formats while accomplishing certain protection both with regard to the calling mode and contest formats.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, which constitute a part of this specification, exemplary embodiments exhibiting biting various objectives and features hereof are set forth, specifically:

FIG. 1 is a block diagram of a system constructed in accordance with the present invention; and

FIG. 2 is a flow diagram of an operating format of the system of FIG. 1.

DESCRIPTION OF THE ILLUSTRATIVE EMBODIMENT

As required, a detailed illustrative embodiment of the present invention is disclosed herein. However, telephone techniques, physical communication systems, data formats and operating structures in accordance with the present invention may be embodied in a wide variety of forms and modes, some of which may be quite different from those of the disclosed embodiment. Consequently, the specific structural and functional details disclosed herein are merely representative, yet in that regard, they are deemed to afford the best embodiment for purposes of disclosure and to provide a basis for the claims herein which define the scope of the present invention.

Referring initially to FIG. 1, a series of remote terminals T1-TN (telephone instruments) are represented (left). The terminals T1-TN may be functionally similar and accordingly only the terminal T1 is shown in any detail. The indicated terminals T1-TN represent the multitude of telephone terminals existing in association with a communication facility CO which may comprise a comprehensive public telephone network.

The communication facility CO, accommodating the individual terminals T1-TN, is coupled to a central processing station CS generally indicated within a dashed-line block. In the station CS, to illustrate operating aspects of the present

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invention, calls are selectively accepted and interfaced so as to accomplish a desired operating format, for example a contest or game.

Generally, calls from the individual terminals T1-TN might be in any of three modes, i.e. the "800" mode, the "900" mode or the area-code mode (traditional area code plus number or local number dialing). In the disclosed illustrative system, depending on individual calling modes, calls are selectively accepted for interface processing. Generally, the interface format accommodates "900" calls with supplemental "800" calls to accommodate both "free" access and all types of telephone terminals. In the disclosed embodiment, calls in the "800" mode are restricted in accordance with prearranged limitations. Furthermore, calls in the area-code mode (from all areas), the 800 mode and 900 mode may be limited to callers having a station number containing a predetermined digit sequence.

For example, calls might be restricted to those from terminals having a telephone number ending in the digits "234".

The processing station CS also is controlled to limit the effectiveness of zealous callers. For example, in a contest format, callers may be quizzed with questions randomly drawn from an inventory. In accordance herewith, questions are not repeated to individual telephone terminals T1-TN. Thus, some control is imposed on an aggressive caller who might otherwise be given two opportunities to answer the same question.

Considering the system of FIG. 1 in greater detail, the exemplary telephone terminal T1 includes a handpiece 10 (microphone and earphone) and a panel 12 provided with a rectangular array of individual push buttons 14 in a conventional configuration. Of course, the handpiece 10 accommodates analog signals while the panel 12 is a digital apparatus. During an interface operation, as disclosed in detail below, the caller is queued or prompted vocally through the handpiece 10 (earphone) to provide digital responses using the buttons 14.

At this stage, some specific aspects of the communication interface are noteworthy. Essentially, as a result of telephonic dialing at one of the terminals T1-TN, the communication facility CO couples the select terminal to an audio response unit. Specifically, to illustrate various aspects, three separate audio response units are provided in the station CS to accept calls in the three distinct modes. That is, an audio response unit 18 receives calls in the "800" mode. An audio response unit 20 receives calls in the area-code dialing mode, and an audio response unit 22 receives calls in the "900" dialing mode.

It will be understood that although three separate audio response units are illustrated, systems incorporating the principles of the present invention may well incorporate various numbers of audio response units for each calling mode, with each audio response unit having the capability to accommodate a substantial number of calls as indicated by the lines from the communication facility CO in FIG. 1. Alternatively, a single composite unit might be utilized. Also, the mode or aspects of the described embodiment might well be implemented singly or in various combinations. Herein, for purposes of explanation, calls are treated individually and processed accordingly through the three audio response units 18, 20 and 22.

Generally, the audio response units 18, 20 and 22 connect callers at remote terminals T1-TN from the communication facility CO through a coupler 24 (FIG. 1, station CS, center) to an interface processor 26. Both the coupler 24 and the

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processor 26 are connected to a control unit 28 that is also connected to the audio response units 18, 20 and 22. Accordingly, with overall supervision by the control unit 28, the audio response units 18, 20 and 22 answer and preliminarily qualify callers from the terminals T1-TN for connection through the coupler 24 to the interface processor 26.

Upon completion of an interface connection in the disclosed embodiment, a contest format is executed by vocally prompting callers to respond with digital data. At this point, it is noteworthy that the communication facility CO also provides identification signals to the audio response units 18, 20 and 22. Specifically, digital identification signals representing numbers associated with the calling terminals T1-TN are provided by "ANI" equipment independent of any action by the caller. In the event "ANI" equipment is not available, callers may be vocally prompted to provide the digital representations by selectively depressing the buttons 14.

The telephone communication facility CO also may provide digital signals indicating the called number. Generally, such a capability involves equipment designated "DNIS". The capability may be useful in various embodiments of the present system, as to distribute calls from a single equipment as mentioned above.

Pursuing the exemplary structure of FIG. 1 in still greater detail, the communication facility CO provides three sets of trunks or lines LA1, LA2 and LA3 respectively coupled to the audio response units 18, 20 and 22. From the audio response units 18, 20 and 22, sets of lines LB1, LB2 and LB3 are connected to the coupler 24. Under control of the control unit 28, the coupler 24 connects individual lines 37 of the sets LB1, LB2 and LB3 to the processor 26 through lines 39.

Generally, the audio response units 18, 20 and 22 may take the form of well known telephonic structures with the capability to "answer" calls and interface callers in a preliminary way. Each of the units 18, 20 and 22 incorporate a voice generator along with some basic programmable logic capability.

The audio response unit 18 is coupled to a free-call memory 32. Generally, the unit 18 in cooperation with the memory 32 operates with the control unit 28 to qualify acceptable calls in the "800" mode.

The audio response unit 20 is connected to a select-number coincidence detector 34. These structures along with the control unit 28 test area-code mode calls. The audio response unit 22 accepts calls without initial qualification.

The system of the disclosed embodiment selectively qualifies callers depending on their calling mode. Additionally, the system responds to caller identification to enhance contest equity.

Generally, the interface processor 26 poses questions to calling contestants and stores the resulting answers in a result memory 36. Questions given to contestants are selected from a memory 38 by a random number generator 40. Essentially, the memory 38 contains an inventory of questions addressable by numbers provided by the random number generator 40. The address numbers from the generator 40 are also supplied to a coincidence detector 42 that also receives the address numerals of questions previously presented to a specific caller from a record 44. Thus, before a question is presented to a caller, the number of the calling terminal is checked to assure that the same question has not previously been posed to a caller at that terminal.

If the coincidence detector 42 clears the current question as not being repetitive, a gate 46 is qualified and the question

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is supplied from the memory 30 to the interface processor 26. A voice generator within the interface processor 26 then provides signals through a designated line 39, the coupler 24, a line 37, one of the audio response units and the communication facility CO to the connected remote terminal. As a result, the caller hears a simulated voice question. The answer is provided by the caller actuating the buttons 14 at the calling terminal. In that regard, the question may be in a multiple choice or true-false format to accommodate simple push button actions at the terminal.

In view of the above description of structural elements in the disclosed embodiment, a comprehensive understanding of the system may now best be accomplished by assuming certain operating conditions and describing the resulting operations.

Accordingly, assume that the system CS is programmed to accommodate a relatively simple game format, that is, a sponsored contest for the promotion of a product, e.g. the XYZ Widget. Further assume the contest is of limited participation based either upon: the payment of a token fee ("900" calling mode), prearranged participation ("800" calling mode), lottery selection (area-code calling mode) or lottery selection in combination with either 800 or 900 calling modes. Considering exemplary possibilities of the format, the XYZ Widget might be advertised with an invitation to participate via the "900" calling mode. Alternatively, participants might be variously qualified as by select notification; however, in the exemplary format, such participants would incur a token charge imposed through "900" telephonic service. To consider an example, an offering might be stated: "If your last three phone digits are 972 you may call, 1) if you wish, call 1 900 XXXX972 (\$0.95 service charge) provided your last three phone digits are 972; 2) if you have written in for a 'free to enter' you can use the one-time PIN number provided your last three phone digits are 972. In this case you can use the 'free' 800 number provided to you with your PIN number."

As indicated above, some telephone terminals do not accommodate "900" calling mode. Also, under certain circumstances, it is important to afford members of the public "free" access to participate in various games or contests. For example, such participation might be arranged by mail or other communication to provide a participant with a limited-use (i.e. one) qualification number. With use, the numbers are stored in the memory 32 and the list is checked subsequently to avoid repeat use.

A third class of contest participants might be considered lottery winners. For example, the sponsor might televise a drawing of three decimal digits to provide a sequence of three numbers. The three numbers might identify "winning" or "entitled" participants by corresponding to the last three numbers (digits) of their telephone number. For example, the drawing of the numbers "257" would entitle a single call participation from any of the telephone terminals T1-TN designated by a number, the last three digits of which are "257".

In an exemplary contest format, participants might be asked a few test questions (for minor prizes and the ability to participate in a lottery). Of course, a vast variety of possibilities exist; and in that regard, interim prizes may be awarded to participants as the format proceeds from the initial call to the ultimate prize. At the present point, it is important to appreciate that the system accommodates participants using various telephone call modes with select qualification to participate in an interface format utilizing voice prompt and push-button digital communication. In

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accordance with the described example, the sponsor invites participants to enter using "900" calling mode service. As a part of such an invitation, persons are advised that "free" entry or participation may be gained by sending a self-addressed envelope to receive an entry number, e.g. eight digits, for use via "800" calling mode service. In the disclosed embodiment, the eight-digit numeral is coded for verification. Of course, numerous possibilities exist. As a simple example the second and sixth digits of the number might have a specific sum, e.g. seven or seventeen. That is, the second and sixth digits might be: three and four, five and two, six and one, seven and zero, nine and eight and so on. A qualifying number would be: "34726313", the second and sixth digits being four and three, respectively.

With the arrangements completed for calling entries in the "900" and "800" mode, the contest might operate for several days before being opened to area-calling participants. That is, the area-calling mode might be available only after a televised drawing entitling participation from a select group of telephone numbers for a limited period of time.

In view of the above assumptions and descriptions, consider now the operation of the system as depicted in FIG. 1 in relation to the process diagram of FIG. 2. That is, assume the system of FIG. 1 is implemented and programmed to accommodate the exemplary operations as will now be described with reference to the process diagram of FIG. 2.

First, suppose a caller at the terminal T1 places a call in the "900" mode in response to an advertisement by a sponsor promoting XYZ Widgets. Perhaps the caller will receive at least a token gift and might qualify for a major lottery prize.

The assumed call involves the caller actuating the buttons 14 as for example to input: "1 900 5558945". As a result, signals are provided to the communication facility CO resulting in a connection from the remote terminal T1 to the audio response unit 22. With the connection, the communication system CO also provides the audio response unit 22 with digital identification signals representative of the designation for remote terminal T1 ("212 627 2222"). The identification signals are provided by the ANI equipment within the communication facility CO and are registered by the audio response unit 22. The operation is illustrated as a process step in FIG. 2 by the block 50 (upper right) for "900" mode calls.

As suggested above, it may be desirable for a format to provide a token award to all callers in the "900" mode. Recognizing such particulars as possibilities, in the disclosed embodiment, calls in the "900" mode are passed through the audio response unit 22 (FIG. 1) and the coupler 24 to the interface processor 26. Accordingly, the interface processor 26 receives the calling number and processes the contest format as described in detail below.

The initial step of the format common to all call modes is represented by the block 52 in FIG. 2. However, as calls in all modes are processed similarly from that point, before proceeding with the explanation, the preliminary operations attendant other calling modes first will be explained.

As explained above, certain accommodations are made for participation in the "800" (caller free) mode. Accordingly, assume a caller at the terminal T1 has been given an identification number: "34726313" for use in the "800" mode. Accordingly, the caller dials a number, e.g. "800 555 3478", actuating the terminal T1 and the communication facility CO to provide a connection with the audio response unit 18. With communication, the audio response unit actuates an internal voice generator prompting the caller to key in his assigned number, "34726313". As the digits of

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the number are keyed in by the caller, they are supplied from the audio response unit 18 to the control unit 28 and the free-call memory 32.

Within the control unit 28, logic is provided for verifying the identification number as proper. In accordance with the simple example explained above, the control unit 28 would simply sum the second and sixth digits to test for a total of "7". The coincidence test is represented by the query block 56 in FIG. 2. As indicated above, various codes and verification techniques are well known along with the apparatus for verifying assigned numbers.

If the control unit 28 validates the qualification number "34726313", it is recorded in the free-call memory 32 for future checking against repeat use. Accordingly, each call in the "800" mode also involves a check or test from the audio response unit 18 to the memory 32 to determine whether or not the assigned qualification number has been previously used. The previous-use test is illustrated as a process step by the query block 58 in FIG. 2.

If the control unit 28 determines the qualification number to be invalid or the memory 32 reveals the number has been previously used, the communication is aborted by the audio response unit 18. For example, the audio response unit 18 may be actuated to provide simulated audio signals carrying a message terminating the communication. For example, the caller might be advised: "The number you have provided is not valid. Consequently, your participation cannot be accepted on that basis."

If the entered number is valid and has not been previously used, the tests indicated by the query blocks 56 and 58 (FIG. 2) are positive and the process again proceeds to the common step as indicated by the block 52, e.g. as to receive a token gift.

As indicated above, a third possibility for contest participation involves calling in the area-code mode. While numerous format possibilities exist, as suggested above, access for callers in the area-code mode might be limited to a relatively short period of time. For example, a television program advertising the XYZ Widget might include a drawing to select the telephone terminals from which callers may participate for a period of twenty-four hours. As indicated above, the drawing might identify the last three digits of telephone numbers for the approved terminals.

Following a relatively short time (e.g. one day) during which area-code callers may enter the contest, the contest might be concluded with the ultimate winner or winners determined. In any event, assume the presence of a caller at the terminal T2 with an approved telephone number, i.e. "212 627 2257". Somewhat as explained above with respect to other calling modes, keying operations by the caller at the remote terminal T2 result in a connection through the communication system CO to the audio response unit 20. As previously, the communication facility CO provides digital signals to the audio response unit 20 indicating the calling number (ANI). Thus, the calling number is registered as indicated by the block 62 in FIG. 2. As previously, in the event ANI equipment is not operative to serve the remote terminal T2, then the caller may be asked to key in his telephone number for subsequent verification.

From the audio response unit 20, the caller's number is supplied to the coincidence detector and storage unit 34 for a two-stage test. A first test simply seeks a coincidence between the approved number sequence (three digits) and the last three digits of the calling number. In the example, the last three digits of the calling number ("257") are compared with the select digit sequence, "257". The test is indicated by the query block 64 in FIG. 2.

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As a secondary test, the unit 34 may check a record of previous use. Thus, the unit 34 simply implements test logic to accomplish these comparison-step operations with structures as well known in the prior art.

If the tests are negative, as indicated by the query block 64, the communication is aborted as indicated by the block 60. Alternatively, a favorable test again directs the system to proceed to the step of block 52 at which the process enters a common phase for all calling modes.

With the entry of a call into the common phase, the line carrying the call is connected through the coupler 24 (FIG. 1) to the interface processor 26. That is, depending on the call mode, the call is passed through one of the audio response units 18, 20 or 22 and the coupler 24 to the interface processor 26. Note that as indicated above, each of the audio response units 18, 20 and 22 is capable of accommodating a large number of asynchronous calls. Similarly, the coupler 24 is capable of connecting lines from the audio response units 18, 20 and 22 (LB1, LB2 and LB3 respectively) to the interface processor on an individual basis through lines 37 and 39.

The interface processor 26 may comprise a relatively substantial computing capability for processing many individual calls with programmed variations. The processing operation is illustrated in FIG. 2 beginning with the block 52. However, note that as the interface processor 26 receives the telephone number identifying a calling terminal (ANI) reference may be made to a data bank. Therefore, the operation might involve reference to substantial data on a caller. Accordingly, a basis exists for several process variations accommodated by data from a bank. The block 52 represents such possibilities as well as further informing or processing callers.

With the receipt of a call at the interface processor 26, a voice generator may be actuated to specifically inform a caller, depending upon the specific format employed. Essentially, digital signals are provided to actuate a voice generator within the processor 26. Accordingly, an audio message is provided through the coupler 24, the associated audio response unit, and the communication facility CO to the connected remote terminal. Thus, the caller may be further informed or cued.

In the disclosed embodiment, concurrently with the operation of further informing the caller, the interface processor 26 actuates the random number generator 40 to provide a random address for the question memory 38. The process step is illustrated in FIG. 2 by the block 66.

The random number (identifying a question in the memory 38) is also provided to the coincidence detector 42 to test for the previous use of the question to the calling terminal. In that regard, the interface processor 26 provides the caller telephone number (ANI) to the caller record 44 which may simply take the form of a look-up table addressed by calling numbers and revealing the identification of previous questions propounded. The addresses of questions previously recorded for a calling number are supplied to the coincidence detector 42 for comparison with the current tentative question identification number. The process step is illustrated by the query block 68 in FIG. 2.

If the tentative question has been previously used for the calling terminal, a signal is provided from the coincidence detector 42 to the interface processor prompting a repeat operation by the random number generator 40 to select another question.

Alternatively, if the tentative question is not a repeat, then the coincidence detector 42 qualifies the gate 46 and the

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tentative question is supplied to the interface processor 26 for actual use. Note that upon the occurrence of an approved question, the coincidence detector also supplies a signal to the call record 44 which records the identification number of the question. The process step is illustrated in FIG. 2 by the block 70.

With the provision of signals representing a question through the gate 46 to the interface processor 26, the internal voice generator is actuated to propound the question to the caller. Recognizing the vast possibilities for contest formats, one or more rather difficult questions might be propounded to isolate lottery participants. Alternatively, a relatively easy question may be propounded as a minor obstacle to participation in the final phase of the contest. In any event, as prompted or cued, the caller responds using the buttons 14 and the response is registered for testing within the interface processor 26. The process steps are indicated by the block 72 and the query block 74 in FIG. 2. The results of the tests are then stored in the interface result memory 36. Note that in the interests of human perception, a printed record may be developed concurrently with the qualification of lottery participants.

Final processing to determine a winner or winners may involve any of various operations as a drawing, an event, and so on. Accordingly, as indicated by the blocks 76 and 78, final determinations are made of winners and losers with predetermined prize allocations. Thus, the system of the present invention enables effective regulation and control of interfaces between persons at telephone stations and a central processing apparatus. Calls in various modes are accommodated with appropriate tests, and interface data (e.g. test questions) are qualified.

In view of the above descriptions, it will be apparent that the disclosed embodiment is susceptible to considerable modification in the implementation of the present invention in conjunction with a telephone system to accommodate caller interface operations. Although the disclosed embodiment is directed to a contest, it will be apparent that aspects of the system may be variously embodied to accommodate any of a variety of telephone interface operations. Furthermore, it will be apparent that while the disclosed embodiment comprises specific elements and configurations, any of a variety of structures might well be utilized. Accordingly, the scope hereof is deemed to be as set forth in the claims below.

What is claimed is:

1. A telephone call processing system for receiving calls through a telephone communication facility from a multitude of terminals for processing in a select interface format wherein callers are cued by voice signals supplied to said multitude of terminals and respond with digital signals, as by actuating push to said multitude of terminals and respond with digital signals, as by actuating push buttons at said multitude of terminals, said system receiving from the telephone communication systems digital signals indicative of DIS, said telephone call processing system comprising:

means for selectively receiving calls from said multitude of terminals in a plurality of call modes to establish telephone communication with a select subset of callers utilizing calling number identification signals automatically provided by the telephone communication facility, said select interface format selected by said digital signals indicative of DNIS;

means for receiving identification signals for said callers of said select subset;

means for individually cuing said callers of said select subset to provide digital signals that are entered by the

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callers, wherein at least certain of the cues and their responsive digital signals are a part of common processing operations to isolate a sub-subset of said callers; and

means for storing identification signals for said callers of said sub-subset.

2. A telephone call processing system according to claim 1, further comprising:

a random number generator utilized during the common processing operations for isolating said sub-subset of said callers.

3. A telephone call processing system for receiving calls through a telephone communication facility from a multitude of terminals for processing in a select interface format wherein callers are cued by voice signals supplied to said multitude of terminals and respond with digital signals, as by actuating push buttons at said multitude of terminals, said telephone call processing system comprising:

means for receiving calls from said multitude of terminals in at least two or more call modes and establishing telephone communication to select a subset of callers based upon online responses provided by said select subset of callers to questions provided via a voice generator of the telephone call processing system, said means for receiving calls receiving and utilizing automatic number identification signals associated with a calling terminal automatically provided by the telephone communication facility;

means for providing identification signals entered by said callers of said select subset; and

means for processing data relating to said callers of said select subset in accordance with common processing operations for calls received in the two or more call modes to isolate a sub-subset of said callers.

4. A telephone call processing system according to claim 3, further comprising:

a random number generator utilized during the common processing operations for isolating said sub-subset of said callers.

5. A telephone call processing system for receiving calls through a telephone communication facility from a multitude of terminals for processing in a select interface format wherein callers are cued by synthesized voice signals supplied to said multitude of terminals and respond with digital signals, as by actuating push buttons at said multitude of terminals, said telephone call processing system comprising:

means for selectively receiving calls from said multitude of terminals to establish telephone communication with a select subset of callers, said means for selectively receiving calls comprising means for receiving calls in a plurality of call modes including a toll free calling mode and a caller charge calling mode or an area code mode;

means for providing identification signals entered by said callers of said select subset;

means for individually cueing said callers of said select subset to prompt digital signals, wherein at least certain of the cues and their responsive digital signals are a part of common processing operations for the plurality of call modes to isolate a sub-subset of said callers; and

means for storing identification signals for said callers of said sub-subset.

6. A telephone call processing system for receiving calls through a telephone communication facility from a multitude of terminals for processing in an interface format

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wherein callers are cued by synthesized voice signals supplied to said multitude of terminals and respond with digital signals, as by actuating push buttons at said multitude of terminals, said telephone call processing system comprising:

means for receiving calls from said multitude of terminals and establishing telephone communication to select a subset of callers based upon online responses provided by said select subset of callers to questions provided by a voice generator of the telephone call processing system, said means for receiving calls comprising means for receiving calls in a plurality of call modes including an "800" toll free calling mode and a caller charge calling mode or an area code mode;

means for receiving identification signals entered by said callers of said select subset; and

means for processing data relating to said callers of said select subset in accordance with common operations for the plurality of call modes to isolate a sub-subset of said callers.

7. A process for receiving calls through a telephonic communication facility from a multitude of terminals in different call modes including a toll free call mode and an area code call mode and processing the calls in accordance with respective interface formats for the different call modes, wherein the process involves digital signals including digital signals provided by the multitude of terminals as for identification or data, comprising the steps of:

receiving calls in the toll free call mode and providing an interface format associated with the toll free call mode; providing an identification number to facilitate participation via the toll free call mode;

verifying the participation number for approval receiving calls in the area code mode and providing another interface format associated with the area code mode;

providing preliminary automated greetings specific to respective interface formats associated with the toll free call mode and the area code mode, prior to execution of at least certain common operations of the interface formats; and

concurrently processing the verified calls received in the toll free call mode and the calls received in the area code mode in accordance with at least certain common operations of the interface formats associated with the toll free and the area code call modes.

8. A process for receiving calls according to claim 7, wherein a data bank relating to a caller is accessed to reference data on a caller.

9. A process for receiving calls according to claim 7, wherein the respective interactive interface formats are associated with an information service.

10. A process for receiving calls according to claim 7, further comprising the steps of:

prompting callers calling from the multitude of terminals in the different call modes with multiple questions; and further receiving responses from the callers in the form of digital data developed by the multitude of terminals.

11. A process for receiving calls according to claim 10, further comprising the step of:

isolating a subset of callers based on the responses received from the callers.

12. A process for receiving calls according to claim 7, further comprising the steps of:

receiving the identification number in the form of a caller pin-number as digital signals provided by the multitude of terminals for identification; and

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wherein the verifying step includes testing to determine if the caller pin-number is eligible to participate.

13. A process for receiving calls according to claim 7, wherein the caller identification number is tested based on limited use.

14. A telephone call processing system according to claim 7, wherein the toll free call mode is an "800" call mode.

15. A process for receiving calls according to claim 7, further comprising the steps of:

prompting callers calling from the multitude of terminals in the different call modes with multiple questions; and further receiving responses from the callers in the form of digital data developed by the multitude of terminals to isolate a subset of callers.

16. A process according to claim 7, further comprising the step of:

receiving called number identification signals (DNIS) automatically provided by the telephonic communication facility at least for the calls in the toll free call mode and selecting the respective interface format under control of the called number identification signals (DNIS).

17. A process according to claim 16, further comprising the Step of:

testing the identification number to control for previous use under control of the called number identification signal.

18. A process according to claim 16, further comprising the step of:

testing the identification number to control for limited use based on a limited period of time under control of the called number identification signals.

19. A process according to 7, further comprising the step of:

receiving calling number identification data automatically by the telephonic communication facility.

20. A process according to claim 19, further comprising the step of:

controlling certain of the operations of at least one of the formats under control of at least certain of the calling number identification signals.

21. A process for receiving calls through a communication facility from a multitude of terminals in an 800 call mode for processing data in accordance with an identified one of a plurality of interface formats and involving digital signals including digital signals provided by the multitude of terminals for identification or data, the process comprising the steps of:

receiving calls in the 800 call mode wherein digital signals indicative of at least a first called number (DNIS) identify a first interface format;

receiving calls in the 800 call mode wherein digital signals indicative of a second distinct called number (DNIS) identify a second interface format;

receiving calling number identification signals automatically provided by the communication facility to indicate calling terminal numbers for certain of the multitude of terminals to verify on-line the calls received for at least one of the two distinct called numbers to provide verified calls;

processing calls received in the 800 call mode for the two distinct called numbers in accordance with preliminary operations of the first and second interface formats, wherein the preliminary operations compromise:

providing a distinct automated greeting under control of the digital signals (DNIS) to callers calling at least one

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of the two distinct called numbers associated with the first and second formats in the 800 call mode; and coupling the calls received in the 800 call mode for the two distinct called numbers wherein at least certain calls are verified calls for concurrent processing in accordance with common operations of the first and second interface formats.

22. A telephone call processing system according to claim 21, wherein the means for processing processes data provided by callers to update a databank relating to the callers.

23. A telephone call processing system according to claim 21, wherein the first response unit and the second response unit are incorporated within a single composite unit.

24. A process according to claim 21, further comprising the step of receiving caller data provided via the multitude of terminals and wherein verification of the calls received in the 800 call mode for at least one of the two distinct called numbers is based upon a test of the caller provided data based upon limited use.

25. A process according to claim 24, wherein the limited use is a one-time only use.

26. A process according to claim 24, wherein the caller provided data includes digital signals indicative of a personal identification number.

27. A process according to claim 24, wherein the limited use limits use by callers during a single period of time.

28. A process according to claim 24, wherein the caller provided data includes caller pin-number data, which is subject to limited use.

29. A process according to claim 24, further comprising the step of:

storing the caller provided data or the calling number identification signals and restricting the extent of access to the identified one of the plurality of interface formats based on at least one of caller provided data or calling number identification data.

30. A process according to claim 24, wherein the caller data provided is used to update data for the callers in a data bank relating to the callers.

31. A process according to claim 21, further including memory means for storing the digital signal.

32. A process according to claim 21, further comprising the step of:

providing at least one voice prompt to solicit a response in the form of data entered interactively by the callers calling one of the two distinct called numbers associated with the 800 call mode.

33. A process according to claim 32, wherein at least certain of the data entered interactively is stored.

34. A process according to claim 33, wherein the step of providing at least one voice prompt is initiated upon receiving calling terminal numbers associated with at least certain terminals.

35. A process according to claim 21, wherein the calling number identification signals associated with at least certain terminals are used to access a data bank relating to calls from the terminals.

36. A process according to claim 35, wherein the data bank is updated with data relating to the calling number identification signals.

37. A process according to claim 21, wherein the step of verifying includes the step of tallying calls placed to at least one called number in the 800 call mode up to a predetermined limit.

38. A process according to claim 21, wherein the calling number identification signals are tested based on limited use.

39. A process according to claim 21, wherein at least one of the plurality of interface formats is an on-line processing format in real-time.

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40. A process according to claim **21**, wherein the process includes multiple comparative processing operations at least a part of which occur during the common operations.

41. A process according to claim **21**, wherein the step of concurrent processing of calls includes the step of processing to isolate a subset of callers. 5

42. A process according to claim **21**, wherein at least one of the processing of interface formats is an information format.

43. A process according to claim **42**, wherein the information format is a financial information format.

44. A process according to claim **43**, wherein the financial information format includes provision of data on stocks and bonds.

45. A process according to claim **21**, further comprising: receiving data provided by the caller via the terminals; and

testing the caller provided data against stored data to determine approval for the caller.

46. A process according to claim **45**, wherein there is further testing of the caller provided data against a record of previous use. 20

47. A process according to claim **45**, wherein the testing step utilizes a coincidence detector and storage unit.

48. A process according to claim **21**, wherein both the first and second interface formats for the first and second 800 call modes are financial information formats.

49. A process according to claim **21**, further comprising the step of:

receiving and utilizing caller provided identification data or utilizing the calling number identifications signals to determine an appropriate cue for a caller.

50. A process according to claim **49**, wherein the appropriate cue for a caller is determined by avoiding a cue previously provided to a caller. 25

51. A telephone call processing system for receiving calls through a telephonic communication facility from a multitude of terminals in a toll free call mode for processing data in accordance with distinct operating process formats and involving digital signals including called number identification signals (DNIS) automatically provided by the telephonic communication facility, the system comprising:

first response unit for receiving calls in the toll free call mode wherein the called number identification signals (DNIS) indicative of at least one of a plurality of distinct called numbers identifies one of the operating process formats;

voice generator means for prompting callers to enter data in response to at least one voice prompt wherein the data entered by the callers is used to update data for the callers in a database relating to the callers;

verification means for verifying at least the calls utilizing the one of the plurality of distinct called numbers in the toll free call mode received by the first response unit to provide verified calls based upon verifying caller entered identification data including caller personal identification data;

second response unit means for receiving calls in the toll free call mode wherein called number identification signals (DNIS) indicative of one other of the plurality of distinct called numbers identifies a different one of the operating process formats;

means for concurrently processing calls received by the first response unit means and the calls received by the second response unit for concurrent processing of data in accordance with at least certain common operations of the operating process formats; and

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audio control unit for providing an automated greeting, prior to execution of the certain common operations, under the control of the called number identification signals (DNIS) to callers calling at least one of the distinct called numbers whereby the automated greeting is specific to the one of the plurality of distinct numbers.

52. A telephone call processing system according to claim **51**, wherein the verification means verifies the calls in the toll free call mode base upon a test of caller entered identification data based upon limited use. 10

53. A telephone call processing system according to claim **52**, wherein the limited use is a one-time only use.

54. A telephone call processing system according to claim **52**, wherein the limited use limits use by callers during a single period of time. 15

55. A telephone call processing system according to claim **51**, wherein the caller pin-number data is subject to limited use.

56. A telephone call processing system according to claim **51**, wherein digital signals representing calling terminal numbers associated with at least certain terminals are automatically provided by the telephonic communication facility. 20

57. A telephone call processing system according to claim **56**, further including memory means for storing the digital signals. 25

58. A telephone call processing system according to claim **56**, wherein the verification means tests the digital signals representing calling terminal numbers associated with at least certain of the multitude terminals that are automatically provided from the telephonic communication facility. 30

59. A telephone call processing system according to claim **51**, further including memory means for storing data and control means for restricting the extent of access to a select operating process format based on at least one of caller entered data or calling terminal data automatically provided by the telephonic communication facility. 35

60. A telephone call processing system according to claim **51**, wherein the voice generator means prompts responses to at least one voice prompt in the form of data interactively provided by the callers calling at least one of the distinct called numbers. 40

61. A telephone call processing system according to claim **60**, wherein at least one of the responses is stored. 45

62. A telephone call processing system according to claim **60**, wherein the voice generator means prompts responses to at least one question upon receiving calling terminal numbers associated with the multitude of terminals that are automatically provided by the telephonic communication facility. 50

63. A telephone call processing system according to claim **51**, wherein digital signals representing calling terminal numbers associated with at least certain terminals are automatically provided by the telephonic communication facility and are used to access a data bank relating to calls from the terminals. 55

64. A telephone call processing system according to claim **63**, wherein the data bank is updated with data relating to the calling terminal numbers. 60

65. A telephone call processing system according to claim **51**, wherein the verification means tallies calls placed to at least one of the toll free call mode distinct numbers up to a predetermined limit. 65

66. A telephone call processing system according to claim **51**, wherein the data entered by the callers is used to update data for the callers in a data bank relating to the callers. 70

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67. A telephone call processing system according to claim **51**, wherein at least one of the distinct operating process formats is an on-line processing format in real-time.

68. A telephone call processing system according to claim **51**, wherein the means for concurrently processing calls utilizes at least certain of multiple comparative processing operations as part of the common operations.

69. A telephone call processing system according to claim **51**, wherein the means for concurrently processing calls, isolates a subset of callers.

70. A telephone call processing system according to claim **51**, wherein at least one of the distinct operating process formats is a form of financial information format.

71. A telephone call processing system according to claim **70**, wherein the financial information format includes provision of data on stocks and bonds.

72. A system according to claim **51**, wherein the verification means tests the digital signals representing calling number identification signals associated with at least certain of the multitude of terminals for limited use.

73. A system according to claim **72**, wherein the caller entered data is tested against stored data for approval.

74. A system according to claim **72**, wherein there is testing of the caller entered data against a record of previous use.

75. A system according to claim **74**, wherein the testing utilizes a coincidence detector and storage unit.

76. A system according to claim **51**, wherein both the interface operating formats for the first response unit and the second response unit are financial information formats.

77. A system according to claim **51**, wherein the means for concurrently processing together with the voice generator means utilizes caller entered identification data or calling number identification signals to determine an appropriate cue for a caller.

78. A system according to claim **77**, wherein the appropriate cue is determined to avoid a cue previously provided to a caller.

79. A system according to claim **51**, further comprising: a third response unit for receiving calls in an area code mode.

80. A process for receiving calls through a communication facility from a multitude of terminals in an 800 call mode for processing data in accordance with an identified one of a plurality of interface formats and involving digital signals including digital signals provided by the multitude of terminals for identification or data, the process comprising the steps of:

receiving calls in the 800 call mode wherein digital signals indicative of at least a first called number (DNIS) identify a first interface format;

receiving calls in the 800 call mode wherein digital signals indicative of a second distinct called number (DNIS) identify a second interface format;

processing calls received in the 800 call mode for the two distinct called numbers in accordance with preliminary operations of the first and second interface formats, wherein the preliminary operations comprise at least the step of:

providing a distinct automated greeting voice prompt to callers calling at least one of the two distinct called numbers associated with the first and second formats in the 800 call mode;

receiving caller provided data entered by the callers and testing the caller entered data to verify on-line the calls received for at least one of the two distinct called numbers to provide verified calls; and

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coupling the calls received in the 800 call mode for the two distinct called numbers wherein at least certain calls are verified calls for concurrent processing in accordance with at least certain common operations of the first and second interface formats.

81. A process according to claim **80**, further comprising the step of:

receiving caller data provided via the terminals and wherein verification of the calls received in the 800 call mode for at least one of the two distinct called numbers is based upon a test of the caller provided data based upon limited use.

82. A process according to claim **81**, wherein the limited use is one-time only use.

83. A process according to claim **81**, wherein the caller provided data includes digital signals indicative a personal identification number.

84. A process according to claim **81**, wherein the limited use limits use by callers during a single period of time.

85. A process according to claim **81**, wherein the caller provided data includes caller pin-number data, which is subject to limited use.

86. A process according to claim **80**, further comprising the step of:

receiving digital signals representing calling number identification signals associated with at least certain terminals that are tested.

87. A process according to claim **86**, further comprising the step of:

storing the caller provided data or the calling number identification signals and restricting the extent of access to at least one of the first or second formats based on at least one of caller provided data or calling number identification data.

88. A process according to claim **87**, wherein at least one of the plurality of interface formats is an information format.

89. A process according to claim **88**, wherein the information format is a financial information format.

90. A process according to claim **89**, wherein the financial information format includes provision of data on stocks and bonds.

91. A process according to claim **80**, further comprising the step of:

providing at least one voice prompt to solicit a response in the form of data entered interactively by the callers calling at least one of two distinct called numbers associated with the 800 call mode.

92. A process according to claim **91**, wherein at least certain of the data entered interactively is stored.

93. A process according to claim **91**, wherein the step of providing at least one voice prompt is initiated upon receiving calling terminal numbers associated with at least certain terminals.

94. A process according to claim **80**, wherein calling number identification signals associated with certain terminals are received and used to access a data bank relating to calls from the certain terminals.

95. A process according to claim **94**, wherein the data bank is updated with data relating to the calling number identification signals.

96. A process according to claim **80**, wherein the testing step includes the step of tallying calls placed to at least one number of the toll free call mode up to a predetermined limit.

97. A process according to claim **80**, wherein the caller provided data is used to update data for the callers in a data bank relating to the callers.

98. A process according to claim **80**, wherein the calling number identification signals are tested based on limited use.

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99. A process according to claim **80**, wherein at least one of the plurality of interface formats is an on-line processing format in real-time.

100. A process according to claim **80**, wherein the process includes multiple comparative processing operations at least a process of which occur during the common operations.

101. A process according to claim **80**, wherein the step of concurrent further processing of calls includes the step of processing to isolate a subset of callers.

102. A process according to claim **80**, wherein the caller provided data is tested against stored data to determine approval for a caller. ¹⁰

103. A process according to claim **102**, wherein there is testing of the caller provided data against a record of previous use.

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104. A process according to claim **102**, wherein the testing step utilizes a coincidence detector and storage unit.

105. A process according to claim **80**, wherein both the first and second interface formats for the first and second 800 call modes are financial information formats.

106. A process according to claim **80**, further comprising the step of utilizing caller entered identification data or calling number identifications signals to determine an appropriate cue for a caller.

107. A process according to claim **106**, wherein the appropriate cue for a caller is determined by avoiding a cue previously provided to a caller.

* * * * *

EXHIBIT 18



US006512415B1

(12) **United States Patent**
Katz

(10) **Patent No.:** US 6,512,415 B1
(45) **Date of Patent:** *Jan. 28, 2003

(54) **TELEPHONIC-INTERFACE GAME CONTROL SYSTEM**

(56)

References Cited**U.S. PATENT DOCUMENTS**

2,902,541 A 9/1959 Singleton

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

AU

66113/81 7/1981

(List continued on next page.)

OTHER PUBLICATIONS

Basinger, R. G., et al., "Calling Card Service—Overall Description and Operational Characteristics", The Bell System Technical Journal, Sep., 1982.

(List continued on next page.)

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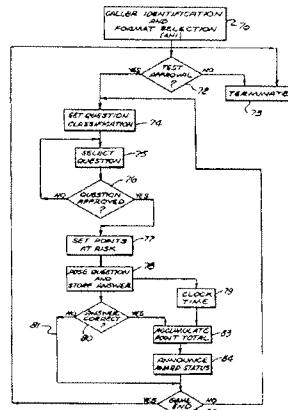
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ABSTRACT

A control system CS interfaces a multiplicity of individual terminals T1-Tn through a telephone network facility CO to accommodate game formats. At the terminals T1-Tn, callers are prompted by voice-generated instructions to provide digital data that is identified for positive association with a caller and stored, as for processing. Calls are conditionally accepted based on a test of preliminary identification data (ANI or DNIS). Computer generated designations are assigned to callers and stored. Questions for game use are stored in banks, classified by order of difficulty for selection according to various formats. Specific game formats accommodate various time criteria and caller selection of degree of risk. Caller data is stored in cells along with statistical and identification data; also, key contest data is held accessible in a cache memory for reporting. Caller data may be processed individually or in interrelated formats as with reference to random or source data as to establish progressive subsets. A break-off control circuit may terminate the computer interface aborting to a manual terminal for direct communication with an operator. Real-time operation processing is an alternative to subsequently processing stored data.

32 Claims, 3 Drawing Sheets

US 6,512,415 B1

Page 2

U.S. PATENT DOCUMENTS

2,941,161 A	6/1960	Scantlin	4,054,756 A	10/1977	Comella et al.
3,060,275 A	10/1962	Meacham et al.	4,068,099 A	1/1978	Mikkola
3,076,059 A	1/1963	Meacham et al.	4,071,698 A	1/1978	Barger, Jr. et al.
3,082,402 A	3/1963	Scantlin	4,078,316 A	3/1978	Freeman
3,128,349 A	4/1964	Boesch et al.	4,087,638 A	5/1978	Hayes et al.
3,159,818 A	12/1964	Scantlin	4,088,838 A	5/1978	Nakata et al.
3,246,082 A	4/1966	Levy	4,090,034 A	5/1978	Moylan
3,249,919 A	5/1966	Scantlin	4,090,038 A	5/1978	Biggs
3,299,210 A	1/1967	Bandy	4,108,361 A	8/1978	Krause
3,337,847 A	8/1967	Olsson et al.	4,117,278 A	9/1978	Ehrlich et al.
3,347,988 A	10/1967	Marill et al.	4,121,052 A	10/1978	Richard
3,371,162 A	2/1968	Scantlin	4,145,578 A	3/1979	Orriss
3,381,276 A	4/1968	James	4,150,255 A	4/1979	Theis et al.
3,393,272 A	7/1968	Hanson	4,152,547 A	5/1979	Theis
3,394,246 A	7/1968	Goldman	4,160,125 A	7/1979	Bower et al.
3,482,057 A	12/1969	Abbott et al.	4,160,129 A	7/1979	Peyser et al.
3,515,814 A	6/1970	Morgan	4,162,377 A	7/1979	Mearns
3,544,769 A	12/1970	Hedin	4,187,498 A	2/1980	Creekmore
3,553,378 A	1/1971	Solomon et al.	4,191,376 A	3/1980	Goldman
3,556,530 A	1/1971	Barr	4,191,860 A	3/1980	Weber
3,557,311 A	1/1971	Goldstien	4,192,972 A	3/1980	Bertoglio et al.
3,568,157 A	3/1971	Downing et al.	4,194,089 A	3/1980	Hashimoto
3,569,939 A	3/1971	Doblmaier et al.	4,200,770 A	4/1980	Hellman et al.
3,571,799 A	3/1971	Coker, Jr., et al.	4,201,887 A	5/1980	Burns
3,573,747 A	4/1971	Adams et al.	4,221,933 A	9/1980	Cornell et al.
3,581,072 A	5/1971	Nymeyer	4,223,183 A	9/1980	Peters, Jr.
3,594,004 A	7/1971	Barr	4,232,199 A	11/1980	Boatwright et al.
3,617,638 A	11/1971	Jochimsen et al.	4,241,942 A	12/1980	Bachman
3,618,038 A	11/1971	Stein	4,242,539 A	12/1980	Hashimoto
3,624,292 A	11/1971	Guzak, Jr.	4,243,844 A	1/1981	Waldman
3,644,675 A	2/1972	Walton	4,255,618 A	3/1981	Danner et al.
3,647,973 A	3/1972	James et al.	4,255,619 A	3/1981	Saito
3,651,480 A	3/1972	Downing et al.	4,260,854 A	4/1981	Kolodny et al.
3,656,113 A	4/1972	Lince	4,264,924 A	4/1981	Freeman
3,665,107 A	5/1972	Kopeck et al.	4,264,925 A	4/1981	Freeman et al.
3,675,513 A	7/1972	Flanagan et al.	4,270,024 A	5/1981	Theis et al.
3,688,126 A	8/1972	Klein	4,277,649 A	7/1981	Scheinbein
3,696,335 A	10/1972	Lemelson	4,290,141 A	9/1981	Anderson et al.
3,697,702 A	10/1972	Buonsante et al.	4,299,637 A	11/1981	Oberdeck et al.
3,727,186 A	4/1973	Stephenson	4,302,810 A	11/1981	Bouricius et al.
3,781,810 A	12/1973	Downing	4,303,804 A	12/1981	Johnson et al.
3,787,632 A	1/1974	Male et al.	4,307,266 A	12/1981	Messina
3,792,446 A	2/1974	McFiggins et al.	4,314,103 A	2/1982	Wilson
3,794,774 A	2/1974	Kemmerly et al.	4,317,961 A	3/1982	Johnson
3,800,283 A	3/1974	Gropper	4,320,256 A	3/1982	Freeman
3,829,628 A	8/1974	Tripsas	4,323,770 A	4/1982	Dieulot et al.
3,858,032 A	12/1974	Scantlin	4,328,396 A	5/1982	Theis
3,870,821 A	3/1975	Steury	4,338,494 A	7/1982	Theis
3,881,160 A	4/1975	Ross	4,338,798 A	7/1982	Hedges et al.
3,889,050 A	6/1975	Thompson	4,345,315 A	8/1982	Cadotte et al.
3,909,553 A	9/1975	Marshall	4,348,554 A	9/1982	Asmuth
3,912,874 A	10/1975	Botterell et al.	4,355,207 A	10/1982	Curtin
3,914,747 A	10/1975	Barnes et al.	4,355,372 A	10/1982	Johnson et al.
3,918,174 A	11/1975	Miller et al.	4,360,827 A	11/1982	Braun
3,920,908 A	11/1975	Kraus	4,360,875 A	11/1982	Behnke
3,928,724 A	12/1975	Byram et al.	4,371,752 A	2/1983	Matthews et al.
3,934,095 A	1/1976	Matthews et al.	4,376,875 A	3/1983	Beirne
3,940,569 A	2/1976	Schonbrun	4,389,546 A	6/1983	Glisson et al.
3,947,972 A	4/1976	Freeman	4,393,277 A	7/1983	Besen et al.
3,950,618 A	4/1976	Bloisi	4,398,708 A	8/1983	Goldman et al.
3,974,338 A	8/1976	Luzier et al.	4,401,856 A	8/1983	Curtin et al.
3,982,103 A	9/1976	Goldman	4,405,829 A	9/1983	Rivest et al.
3,987,252 A	10/1976	Vicari	4,420,656 A	12/1983	Freeman
3,989,899 A	11/1976	Norwich	4,427,848 A	1/1984	Tsakanikas
3,991,406 A	11/1976	Downing et al.	4,428,296 A	1/1984	Scheuchzer et al.
3,998,465 A	12/1976	Mascola	4,439,635 A	3/1984	Theis et al.
4,009,342 A	2/1977	Fahrenschon et al.	4,439,636 A	3/1984	Newkirk et al.
4,012,599 A	3/1977	Meyer	4,445,001 A	4/1984	Bertoglio
4,017,835 A	4/1977	Randolph	4,451,700 A	5/1984	Kempner et al.
4,024,345 A	S/1977	Kochem	4,468,528 A	8/1984	Reece et al.
			4,475,198 A	10/1984	Herr et al.

US 6,512,415 B1

Page 3

4,489,438 A	12/1984	Hughes	4,685,127 A	8/1987	Miller et al.
4,490,583 A	12/1984	Bednarz et al.	4,688,170 A	8/1987	Waite et al.
4,494,197 A	1/1985	Troy et al.	4,689,742 A	8/1987	Troy et al.
4,511,764 A	4/1985	Nakayama et al.	4,692,817 A	9/1987	Theis
4,517,410 A	5/1985	Williams et al.	4,694,490 A	9/1987	Harvey et al.
4,517,412 A	5/1985	Newkirk et al.	4,696,028 A	9/1987	Morganstein et al.
4,518,824 A	5/1985	Mondardini	4,696,029 A	9/1987	Cohen
4,518,827 A	5/1985	Sagara	4,697,282 A	9/1987	Winter et al.
4,521,643 A	6/1985	Dupuis et al.	4,704,725 A	11/1987	Harvey et al.
4,523,055 A	6/1985	Hohl et al.	4,706,275 A	11/1987	Kamil
4,532,378 A	7/1985	Nakayama et al.	4,710,955 A	12/1987	Kauffman
4,539,436 A	9/1985	Theis	4,715,061 A	12/1987	Norwich
4,539,735 A	9/1985	Eckmann	4,716,583 A	12/1987	Groner et al.
4,541,087 A	9/1985	Comstock	4,719,647 A	1/1988	Theis et al.
4,544,804 A	10/1985	Herr et al.	4,722,526 A	2/1988	Tovar et al.
4,547,851 A	10/1985	Kurland	4,745,468 A	5/1988	Von Kohorn
4,549,047 A	10/1985	Brian et al.	4,747,124 A	5/1988	Ladd
4,549,291 A	10/1985	Renoulin	4,748,668 A	5/1988	Shamir et al.
4,555,594 A	11/1985	Friedes et al.	4,750,199 A	6/1988	Norwich
4,559,415 A	12/1985	Bernard et al.	4,756,020 A	7/1988	Fodale
4,559,416 A	12/1985	Theis et al.	4,757,267 A	7/1988	Riskin
4,562,342 A	12/1985	Solo	4,759,056 A	7/1988	Akiyama
4,565,903 A	1/1986	Riley	4,761,684 A	8/1988	Clark et al.
4,566,030 A	1/1986	Nickerson et al.	4,761,807 A	8/1988	Matthews et al.
4,567,359 A	1/1986	Lockwood	4,761,808 A	8/1988	Howard
4,570,930 A	2/1986	Matheson	4,763,191 A	8/1988	Gordon et al.
4,577,062 A	3/1986	Hilleary et al.	4,764,666 A	8/1988	Bergeron
4,577,067 A	3/1986	Levy et al.	4,766,604 A	8/1988	Axberg
4,578,700 A	3/1986	Roberts et al.	4,769,834 A	9/1988	Billinger et al.
4,580,012 A	4/1986	Matthews et al.	4,774,655 A	9/1988	Kollin et al.
4,581,486 A	4/1986	Matthews et al.	4,781,377 A	11/1988	McVean et al.
4,582,956 A	4/1986	Doughty	4,782,510 A	11/1988	Szlam
4,584,602 A	4/1986	Nakagawa	4,782,519 A	11/1988	Patel et al.
4,585,903 A	4/1986	Schiller et al.	4,783,796 A	11/1988	Ladd
4,585,906 A	4/1986	Matthews et al.	4,783,800 A	11/1988	Levine
4,586,707 A	5/1986	McNeight et al.	4,785,408 A	11/1988	Britton et al.
4,587,379 A	5/1986	Masuda	4,785,473 A	11/1988	Pfeiffer et al.
4,591,190 A	5/1986	Clark	4,788,682 A	11/1988	Vij et al.
4,591,664 A	5/1986	Freeman	4,788,715 A	11/1988	Lee
4,591,665 A	5/1986	Foster et al.	4,788,716 A	11/1988	Zebe
4,592,546 A	6/1986	Fascenda et al.	4,788,718 A	11/1988	McNabb et al.
4,594,476 A	6/1986	Freeman	4,789,928 A	12/1988	Fujisaki
4,598,367 A	7/1986	DeFrancesco et al.	4,791,664 A	12/1988	Lutz et al.
4,599,493 A	7/1986	Cave	4,791,666 A	12/1988	Cobb et al.
4,600,809 A	7/1986	Tatsumi et al.	4,792,968 A	12/1988	Katz
4,603,232 A	7/1986	Kurland et al.	4,796,293 A	1/1989	Blinken et al.
4,611,094 A	9/1986	Asmuth et al.	4,797,818 A	1/1989	Cotter
4,611,096 A	9/1986	Asmuth et al.	4,797,910 A	1/1989	Daudelin
4,614,367 A	9/1986	Breen	4,797,911 A	1/1989	Szlam et al.
4,625,079 A	11/1986	Castro et al.	4,797,913 A	1/1989	Kaplan et al.
4,625,081 A	11/1986	Lotito et al.	4,799,156 A	1/1989	Shavit et al.
4,625,276 A	11/1986	Benton et al.	4,799,255 A	1/1989	Billinger et al.
4,630,200 A	12/1986	Ohmae et al.	4,800,583 A	1/1989	Theis
4,630,201 A	12/1986	White	4,805,207 A	2/1989	McNutt et al.
4,634,809 A	1/1987	Paulsson et al.	4,805,209 A	2/1989	Baker, Jr. et al.
4,635,251 A	1/1987	Stanley et al.	4,812,843 A	3/1989	Champion, III et al.
4,640,991 A	2/1987	Matthews et al.	4,815,031 A	3/1989	Furukawa
4,645,873 A	2/1987	Chomet	4,815,121 A	3/1989	Yoshida
4,649,563 A	3/1987	Riskin	4,815,741 A	3/1989	Small
4,652,998 A	3/1987	Koza et al.	4,827,500 A	5/1989	Binkerd et al.
4,654,482 A	3/1987	DeAngelis	4,829,563 A	5/1989	Crockett et al.
4,658,417 A	4/1987	Hashimoto et al.	4,832,341 A	5/1989	Muller
4,663,777 A	5/1987	Szeto	4,835,630 A	5/1989	Freer
4,665,502 A	5/1987	Kreisner	4,842,278 A	6/1989	Markowicz
4,669,730 A	6/1987	Small	4,845,739 A	7/1989	Katz
4,671,512 A	6/1987	Bachman et al.	4,847,890 A	7/1989	Solomon et al.
4,672,660 A	6/1987	Curtin	4,850,007 A	7/1989	Marino et al.
4,674,044 A	6/1987	Kalmus et al.	4,852,154 A	7/1989	Lewis et al.
4,677,552 A	6/1987	Sibley, Jr.	4,853,882 A	8/1989	Marshall
4,677,553 A	6/1987	Roberts et al.	4,856,050 A	8/1989	Theis et al.
4,685,123 A	8/1987	Hsia et al.	4,856,066 A	8/1989	Lemelson

US 6,512,415 B1

Page 4

4,866,756 A	9/1989	Crane et al.	5,181,236 A	1/1993	LaVallee et al.
4,876,592 A	10/1989	Von Kohorn	5,181,238 A	1/1993	Medamana et al.
4,876,717 A	10/1989	Barron et al.	5,186,471 A	2/1993	Vancraeynest
4,878,240 A	10/1989	Lin et al.	5,199,062 A	3/1993	Von Meister et al.
4,881,261 A	11/1989	Olipham et al.	5,214,689 A	5/1993	O'Sullivan
4,882,473 A	11/1989	Bergeron et al.	5,222,120 A	6/1993	McLeod et al.
4,893,325 A	1/1990	Pankonen et al.	5,233,654 A	8/1993	Harvey et al.
4,893,328 A	1/1990	Peacock	5,236,199 A	8/1993	Thompson, Jr.
4,893,330 A	1/1990	Franco	5,255,183 A	10/1993	Katz
4,894,857 A	1/1990	Szlam et al.	5,263,723 A	11/1993	Pearson et al.
4,896,345 A	1/1990	Thorne	5,289,531 A	2/1994	Levine
4,896,346 A	1/1990	Belfield et al.	5,299,260 A	3/1994	Shao
4,897,867 A	1/1990	Foster et al.	5,303,298 A	4/1994	Morganstein
4,899,373 A	2/1990	Lee et al.	5,303,299 A	4/1994	Hunt et al.
4,899,375 A	2/1990	Bauer et al.	5,327,554 A	7/1994	Palazzi, III et al.
4,907,079 A	3/1990	Turner et al.	5,333,185 A	7/1994	Burke et al.
4,908,761 A	3/1990	Tai	5,335,277 A	8/1994	Harvey et al.
4,908,850 A	3/1990	Masson et al.	5,351,276 A	9/1994	Doll, Jr. et al.
4,908,852 A	3/1990	Hird et al.	5,351,285 A	9/1994	Katz
4,916,726 A	4/1990	Morley, Jr. et al.	5,353,335 A	10/1994	D'Urso et al.
4,922,519 A	5/1990	Daudelin	5,354,069 A	10/1994	Guttman et al.
4,922,520 A	5/1990	Bernard et al.	5,361,295 A	11/1994	Solomon et al.
4,922,522 A	5/1990	Scanlon	5,369,685 A	11/1994	Kero
4,926,462 A	5/1990	Ladd et al.	5,403,999 A	4/1995	Entenmann et al.
4,932,021 A	6/1990	Moody	5,415,416 A	* 5/1995	Scagnelli et al. 379/93.13
4,933,965 A	6/1990	Hird	5,416,830 A	5/1995	MacMillan, Jr. et al.
4,937,853 A	6/1990	Brule et al.	5,418,844 A	5/1995	Morrisey et al.
4,942,598 A	7/1990	Davis	5,475,205 A	12/1995	Behm et al.
4,942,599 A	7/1990	Gordon et al.	5,490,207 A	2/1996	Schorr
4,942,616 A	7/1990	Linstroth et al.	5,511,112 A	4/1996	Szlam
4,943,995 A	7/1990	Daudelin et al.	5,537,143 A	7/1996	Steingold et al.
4,951,307 A	8/1990	Willard	5,561,710 A	10/1996	Helms
4,955,047 A	9/1990	Morganstein et al.	5,599,046 A	2/1997	Behm et al.
4,959,783 A	9/1990	Scott et al.	5,623,536 A	4/1997	Solomon et al.
4,959,855 A	9/1990	Daudelin	5,651,048 A	7/1997	Leeuw
4,961,217 A	10/1990	Akiyama	5,709,603 A	1/1998	Kaye
4,964,157 A	10/1990	Aoshima	5,709,609 A	1/1998	Kaye
4,965,825 A	10/1990	Harvey et al.	5,768,348 A	6/1998	Solomon et al.
4,969,183 A	11/1990	Reese	5,787,156 A	7/1998	Katz
4,969,185 A	11/1990	Dorst et al.	5,790,636 A	8/1998	Marshall
4,972,461 A	11/1990	Brown et al.	5,815,551 A	9/1998	Katz
4,974,252 A	11/1990	Osborne	5,835,576 A	11/1998	Katz
4,975,945 A	12/1990	Carbullido			
4,989,233 A	1/1991	Schakowsky et al.			
4,989,234 A	1/1991	Schakowsky et al.			
4,992,940 A	2/1991	Dworkin	CA 1022674	12/1977	
4,996,705 A	2/1991	Entenmann et al.	CA 1025118	1/1978	
5,000,486 A	3/1991	Rua, Jr. et al.	CA 1056500	6/1979	
5,001,710 A	3/1991	Gawrys et al.	CA 1059621	7/1979	
5,003,574 A	3/1991	Denq et al.	CA 1162336	2/1984	
5,003,595 A	3/1991	Collins et al.	CA Pub. 1225759	8/1987	
5,014,298 A	5/1991	Katz	CA 2009937-2	8/1990	
5,017,917 A	5/1991	Fisher et al.	DE OS 2929416	2/1981	
5,018,736 A	5/1991	Pearson et al.	DE 32 25 562	1/1984	
5,023,904 A	6/1991	Kaplan et al.	DE OS 3726366	2/1988	
5,033,076 A	7/1991	Jones et al.	DE 4005365 A1	8/1990	
5,033,088 A	7/1991	Shipman	EP 0 120 322	2/1984	
5,036,535 A	7/1991	Gechter et al.	EP 0 217 308 A2	4/1987	
5,046,183 A	9/1991	Dorst et al.	EP 0 229 170 A	7/1987	
5,054,059 A	10/1991	Stern et al.	EP Pub. 0249575	12/1987	
5,083,272 A	1/1992	Walker et al.	EP 0 249 795	12/1987	
5,097,528 A	3/1992	Gursahaney et al.	EP Pub. 0295837	12/1988	
5,109,414 A	4/1992	Harvey et al.	EP Pub. 0342295	11/1989	
5,125,024 A	6/1992	Gokcen et al.	EP Pub. 0434181	6/1991	
5,127,003 A	6/1992	Doll, Jr. et al.	EP 0 451 693 A2	10/1991	
5,128,984 A	7/1992	Katz	EP 0 451 695 A2	10/1991	
5,146,491 A	9/1992	Silver et al.	EP 0 453 831 A2	10/1991	
5,148,474 A	9/1992	Haralamopoulos et al.	EP 0 454 363 A2	10/1991	
5,164,981 A	11/1992	Mitchell et al.	EP 0 568 114 A	11/1993	
5,168,548 A	12/1992	Kaufman et al.	EP 0 620 669 A	10/1994	
5,179,585 A	1/1993	MacMillan, Jr. et al.	EP 0 438 860 B1	9/1996	
			EP 0 382 670 B1	4/1997	

FOREIGN PATENT DOCUMENTS

US 6,512,415 B1

Page 5

EP	0 382 212	B1	7/1998	"Appraisal Of The Fair Market Value Of Delphi Communications", Apr. 30, 1980—(Study) Delphi Communications—(Charts and Exhibits).
EP	0 917 335	A2	5/1999	"Voice-Response System Improves Order Entry, Inventory Control", <i>Communication News</i> , Aug. 1976—(Article).
FR	2 575 016		7/1986	"Periphonics VOICEPAK"—(Brochure) (Undated).
FR	9002131		8/1990	"The Voice Response Peripheral That Turns Every Touch-Tone Telephone Into A Computer Terminal", Periphonics Corporation—(Brochure) (Undated).
GB	1162484		4/1967	Rabin, Jeff, "Minorities Seek 30% Share of All Lottery Operations", <i>Sacramento Bee</i> , Apr. 12, 1985—(Article).
GB	2184327	A	6/1987	Advertisements (Dial Giants Baseball Trivia Game): <i>San Francisco Chronicle</i> , Jul. 3, 1984.
GB	2 230 403	A	10/1990	Curtis, Cathy, "976 numbers let you dial-a-whatever", <i>San Francisco Business Journal</i> , Nov. 26, 1984—(Article).
GB	2 252 270	B	8/1992	Ferrell, Jane, "Three little numbers for instant information", <i>San Francisco Chronicle</i> , Aug. 15 1984—(Article).
GB	2253542		9/1992	"Dallas Telephone Call-In Game Uses Computer Voice Interface", Sep. 24, 1984—(Press Release).
JP	52-17739		2/1977	Rives, R.L., et al., "A Method for Obtaining Digital Signatures and Public-Key Cryptosystems", <i>Communications of the ACM</i> , Feb. 1978, vol. 21, No. 2, pp. 120-126—(Article).
JP	Pub. 52-17740		9/1977	Finnegan, Paul F, "Audiotex: The telephone as data-access equipment", <i>Data Communications</i> , 1987, pp. 155-161 (Article).
JP	54-62708		5/1979	Ozawa, Y., et al., "Voice Response System and Its Applications", <i>Hitachi Review</i> , Dec. 1979, vol. 28, No. 6, pp. 301-305—(Article).
JP	Pub. 56-152365		11/1981	"AT&T 2: Reaches agreement with Rockwell (ROK)", Aug. 26, 1986—(Press Release).
JP	59-83270		5/1984	"AT&T: Expands Computer speech system product line", Apr. 14, 1986—(Press Release).
JP	62-92654		4/1987	Adams, Cynthia, "Conversing With Computers", <i>Computerworld on Communications</i> , May 18, 1983, vol. 17, No. 20A, pp. 36-44—(Article).
JP	62-98848		5/1987	Hester, S.D., et al., "The AT&T MultiMode Voice Systems—Full Spectrum Solutions For Speech Processing Applications", Sep. 1985, pp. 1-10—(Proceedings Of The 1985 AVIOS Conference).
JP	Pub. 62-239757		10/1987	Davidson, Leon, "A Pushbutton Telephone For Alphanumeric Input", <i>Datamation</i> , Apr. 1966, pp. 27-30—(Article).
JP	500138/88		1/1988	Advertisement: Cuervo Gold Beach Chair, VoiceMail Int'l, '83.
JP	63-009353		1/1988	"Digital's All-In-1 Voice Messaging", <i>Digital</i> —(Brochure) (Undated).
JP	63-114442		5/1988	"Access Voice and Mail Messages From One Familiar Source", <i>Insight</i> , -(Article) (Undated).
JP	63-246067		10/1988	"Get The Message . . . !" "New VoiceMail Features", <i>Voicemail International, Inc.</i> , Oct. 1984—(Article).
JP	1-117436		5/1989	Brochures (TWA Crew Scheduling/PSA's Reservation System/Universal Studios Program/Dow Phone): "AVIAR The communication system that keeps you flying", VoiceMail Int'l—(Brochure) (Undated).
JP	298158/90		12/1990	"TWA Voicemail, Flight Attendants Users Guide" Aug. 1986—(Brochure).
JP	41855/91		2/1991	Holtzman, Henry, "Voice Mail Soars At TWA", <i>Modern Office Technology</i> (Reprint), Mar. 1986—(Article).
WO	WO 82/02132		6/1982	"Bid Results via Voicemail—Flight Deck Crew Members", May 1, 1985 (Script).
WO	WO 87/00375		1/1987	Borden, W.S., "Flight Attendant Self Input Of Monthly Bids Via Touch Tone Telephone", <i>In-Flight Services Bulletin</i> , Sep. 15, 1985—(Memo).
WO	WO88/02966		4/1988	
WO	WO88/05985		8/1988	
WO	WO89/02139		3/1989	
WO	WO89/09530		10/1989	
WO	WO 89/11768		11/1989	
WO	WO 90/10989		9/1990	
WO	WO 90/11661		10/1990	
WO	WO 91/15818		10/1991	
WO	WO 92/06548		4/1992	
WO	WO 92/09164		5/1992	
WO	WO 92/15166		9/1992	
WO	WO93/05483		3/1993	

OTHER PUBLICATIONS

- Confalone, D. E., et al, "Calling Card Service—TSPS Hardware, Software, and Signaling Implementation", *The Bell System Technical Journal*, Sep., 1982.
- Eigen, D.J., et al., "Calling Card Service—Human Factors Studies", *The Bell Technical Journal*, Sep., 1982.
- Lexis Search, Nov. 1, 1984, re: System 85 Computer Process.
- Lexis Search, Jan. 28, 1985, re: Rolm Releases Four-Channel Phonemail Voice Message Unit.
- Lexis Search Results (Great American Potato-Chip give-away/Raisin Bran Game/Giants Baseball Trivia-Dial Info): "In The Chips" AdWeek, Jul. 22, 1985.
- "San-Fran-Police-League", *Business Wire*, Aug. 2, 1985.
- "Similar Campaigns", *DM News*, Dec. 15, 1985.
- "Phone Offers Action At Push Of Button", *Advertising Age*, Feb. 6, 1986.
- Boies Stephen J., "A Computer Based Audio Communication System", *Computer Sciences Department*, Thomas J. Watson Research Center, Yorktown Heights, New York, USA, pp. 701-704—(Article) (Undated).
- Winckelmann, W.A., "Automatic Intercept Service", *Bell Laboratories Record*, May 1968, vol. 46, No. 5, pp. 138-143—(Article).
- "Proposed Agreement Between National Enterprises Board (N.E.B.) and Delphi", Jan. 30, 1979.
- Voysey, Hedley, "Nexos wins rights to comms engine", *Computing*, Sep. 6, ??, vol. 7, No. 36—(Article).

US 6,512,415 B1

Page 6

- "Look Ma, no operators! Automatic voice system does many airline jobs", *Air Transport World*, Oct. 1986-(Article). "1,000,000 Share Common Stock", *Vicemail International, Inc.*, Jan. 10, 1984-(Public Offering Summary).
- Levinson, S.E., et al., "A Conversational-Mode Airline Information and Reservation System Using Speech Input and Output", *The Bell System Technical Journal*, Jan. 1980, vol. 59, No. 1, pp. 119-137.
- Emerson, S.T., "Voice Response Systems—Technology to the Rescue for Business Users", *Speech Technology*, Jan/Feb '83, pp. 99-103-(Article).
- Moslow, Jim, "Emergency reporting system for small communities", *Telephony*, Feb. 11, 1985, pp. 30-32, 34-(Article).
- Rabiner, L.R., et al., "Digital Techniques for Computer Voice Response: Implementation and Applications", *Proceedings Of The IEEE*, Apr. 1976, vol. 64, No. 4, pp. 416-432-(Article).
- Moosemiller, J.P., "AT&T's Conversant™ I Voice System" *Speech Technology*, Mar./Apr. 1986, pp. 88-93-(Article).
- Frank, R.J., et al., "No. 4 ESS: Mass Announcement Capability", *The Bell System Technical Journal*, Jul./Aug. 1981, vol. 60, No. 6, Part 2, pp. 1049-1081-(Chapter from a Book). "Chapter I General Description" *D.I.A.L. PRM/Release 3-Version 2* Mar. 1987 (Product Reference Manual).
- "Announcing Release 3.3" *D-A-S-H-D.I.A.L. Application and Support Hints*, Jan./Feb. Mar. 1987, vol. 3, No. 1-(Brochure).
- "D.I.A.L. Software Release 4", *OPCOM*, Jan. 1988, Version 1-(Product Reference Manual).
- Brady, R.L., et al., "Telephone Identifier Interface", *IBM Technical Disclosure Bulletin*, Oct. 1976, vol. 19, No. 5, pp. 1569-1571-(Article).
- Corbett, A.J., "Telephone Enquiry System Using Synthetic Speech", *University of Essex*, Dec. 1974, (Thesis).
- Yoshizawa, K., et al., "Voice Response System for Telephone Betting", *Hitachi Review*, Jun. 1977, vol. 26, No. 6-(Article).
- Sagawa, S., et al., "Automatic Seat Reservation By Touch-Tone Telephone", *Second USA Japan Computer Conference*, 1975, vol. 2, pp. 290-294-(Article).
- Smith, S.L., "Computer-Generated Speech and Man-Computer Interaction", *Human Factors*, 1970, 12(2), pp. 215-223-(Article).
- Newhouse, A., et al., "On The Use Of Very Low Cost Terminals", *University of Houston*, pp. 240-249-(Paper) (Undated).
- Mullen, R.W., "Telephone—home's 'friendliest' Computer", *Inside Telephone Engineer And Management*, May 15, 1985, vol. 89, No. 10-(Article).
- "Telephone Computing Entering Service Bureau Business", *American Banker*, Jul. 5, 1979-(Article).
- Kutler, Jeffrey, "Technology, System Sharing Improve Phone Banking Outlook", *American Banker*, Dec. 7, 1979, vol. CXLIV, No. 237-(Article).
- Kutler, Jeffrey, "Phone Bill Paying Accessed by Pioneer", *American Banker*, Dec. 7, 1979, vol. CXLIV, No. 237-(Article).
- "User's Guide", *Dowphone* (Undated).
- "Audiotex Information From Dow Jones", *The Computer Review*, Nov. 1984, vol. 2, No. 1-(Article).
- "Dow Phone Adds Innovest Systems' Technical Analysis Reports" *IDP Report*, Jan. 3, 1986-(Report).
- Perdue, R.J., et al., "Conversant 1 Voice System: Architecture and Applications", *AT&T Technical Journal*, Sep./Oct. 1986-(Article).
- Martin, James, "Design of Man-Computer Dialogues", *IBM System Research Institute*, Chapter 16, pp. 283-306-(Chapter from a Book) (Undated).
- Kaiserman, D.B., "The Role Of Audio Response In Data Collection Systems", *Proceedings of the Technical Sessions*, Paleis des Expositions, Geneva, Switzerland, Jun. 17-19, 1980, pp. 247-251-(Article).
- Boies, S.J., et al., "User Interface for Audio Communication System", *IBM Technical Disclosure Bulletin*, Dec. 1982, vol. 25, No. 7A, pp. 3371-3377-(Article).
- Kramer, J.J., "Human Factors Problems in the Use of Pushbutton Telephones for Data Entry", *Bell Telephone Laboratories*, Holmdel, N.J., Apr. 74, pp. 241-258-(Paper).
- Cox, Jr., Floyd, "Flor Fax", Jan. 22, 1986-(Letter and Advertisements).
- Isayama, Tetsuya, "Automatic Response Processing Equipment as a Multi-media Communication Node", *Japan Telecommunications Review*, 1987, vol. 29, No. 1, pp. 29-36-(Article).
- Imai, Y., et al., "Shared Audio Information System Using New Audio Response Unit" *Japan Telecommunications Review*, Oct. 1981, vol. 23, No. 4, pp. 383-390-(Article). "Distrust of computer kills home service plan" (date and source missing).
- "Automatic Call Distributor/Management Information System: Interface between 1/1AESS™ Switch Central Office and Customer Premises Equipment", *Bell Communications Research*, Dec. 1986, Technical Reference TR-TSY-000306, Issue 1-(Article).
- "Comparison Of ACD Systems", *Connection*, Feb. 1990-(Chart).
- "ACD Comparison", *Aspect*, Feb. 2, 1990-(Final Report).
- Borison, V.S., "Transaction—telephone gets the fact at the point of sale", *Bell Laboratories Record*, Oct. 1975, pp. 377-383-(Article).
- Demeautis, M., et al., "The TV 200 A Transactional Telephone", *Commutation & Transmission* n 5, 1985, pp. 71-82-(Article).
- Eriksson, G., et al., "Voice and Data Workstations and Services in the ISDN", *Ericsson Review*, May 1984, pp. 14-19-(Article).
- Schrage, Michael, "A Game Von Meister in Pursuit of Profits", *Washington Post*, Sep. 23, 1985-(Article).
- Svigals, J., "Low Cost Point-Of-Sale Terminal", *IBM Technical Disclosure Bulletin*, Sep. 1982, vol. 25, No. 4, p. 1835.
- Turbat, A., "Telepayment An Electronic Money The Smart Card", *Commutation & Transmission* n 5, 1982, pp. 11-20-(Article).
- "Voice Mail", *Sound & Communications*, Apr. 1983, vol. 28, No. 12, pp. 84-85-(Article).
- Aso, Satoshi, "Trends and Applications of Voice Output Devices" 2209 J.E.E. *Journal of Electronic Engineering*, Feb. 1982, vol. 19, No. 182, pp. 102-107-(Article).
- Kroemer, F., "TELEBOX", Unterrichtsblätter, year 38/1985, No. 4, pp. 131-141 (Article)-no translation.
- Kroemer, F., "TELEBOX", Unterrichtsblätter, year 41/1988, No. 2, pp. 67-83 (Article)-no translation.
- C.R. Newson, "Merlin Voice Mail VM600," *British Telecommunications Engineering*, vol. 4, Apr. 1985, pp. 32-35.
- A.S. Yatagai, "Telephonic Voice Synthesis Systems," *Telecommunications*, Aug. 1985, pp. 56h-I, 68.

US 6,512,415 B1

Page 7

- A.J. Waite, "Getting Personal With New Technologies For Telemarketers," DM News, Feb. 15, 1987 at 50.
- "Shopping via a network is no longer just talk," Data Communications, Aug. 1981 at 43.
- "Growth-Oriented Systems," Restaurant Technology, Nation's Restaurant News Newspaper, Jul. 1, 1985 at 51.
- "Let your fingers do the tapping . . . and the computer the talking," Modern Office Tech., May 1984 at 80.
- "American Software unveils systems for IBM mainframes," Computerworld, Mar. 26, 1984 at 59.
- "Business Units Get Order Entry," Computerworld, Jul. 12, 1982 at 36.
- "AT&T's Response to Plaintiff's Second Set on Interrogatories to Defendant AT&T Corp. (Nos. 17-18)", *Ronald A. Katz Technology Licensing, L.P. and MCI Telecommunications Corp.*, Civil Action No. 97-4453 (USDC, ED PA).
- Lanzeter, Ygal, "Automatic Number Identification System for Step-By-Step Exchanges", *The Ninth Convention of Electrical and Electronics Engineers in Israel*, Apr. 1975-(Paper).
- Flanagan, J.L. et al., "Speech Synthesis", Chapters 1, 39, 42, 45 and 46 -(Chapter from a Book).
- "Bell Atlantic's Bolger Wants to be Free", *Telephony*, Jul. 14, 1986-(Article).
- "Advanced New Cable TV Technology Developed for Impulse-Pay-Per-View", Jun. 3, 1985-(Search).
- Noll, M.A. "Introduction to Telephones & Telephone Systems", Second Edition, Chapter 9-(Chapter from a Book).
- "Proposal for Kome Mediavoice interactive Phone/Database Marketing Systems", "Mediavoice Startup Software Package For Kome ", "Optional Mediavoice Software Packages For Kome ", "Why ATI Mediavoice is the Choice for Success"-(Proposal).
- Meade, Jim, Dec., 29, 1992-(Letter).
- "All About Voice Response", *Datapro Research Corporation*, Delran, N.J. Mar. 1972 and Sep. 1974-(Article).
- "Voice Response in Banking Application", *Datapro Research Corporation*, Delran, N.J., Oct. 1974 and Feb. 1983-(Article).
- Schiller, T.R., "Field Craft Technician Communication with a Host Computer Synthesized Voice", *Proceedings AVIOS '86 Voice I/O Systems Applications Conference*, Sep. 16-18, 1986.
- Ravin, Richard, "Telephone Access Applications: the Growth Market for Voice Processing", *Proceedings AVIOS '86 Voice I/O Systems Applications Conference*, Oct. 6-8, 1987.
- Schuster, E.R., "B.R.U.T.U.S. Better Registration Using Touch-Tone phones for University Students", *Proceedings AVIOS '86 Voice I/O Systems Applications Conference*, Oct. 4-6, 1988.
- "Exxon's Next Prey-IBM and XEROX", *BusinessWeek*, Apr. 28, 1980, pp. 92-96 and 103-(Article).
- Weinstein, S.B. "Emerging Telecommunications Needs of the Card Industry", *IEEE Communications Magazine*, vol. 22, No. 7, pp. 26-31-(Article).
- "Riding Gain", *Broadcasting*, Mar. 7, 1983-(Article).
- Pickup, Mike, "Bank from home, by Screen or by phone", *Building Society Gazette*, July 1988-(Article).
- Rabiner, L.R., et al., "Isolated and Connected Work Recognition-Theory and Selected Applications", *IEEE Transaction Communications*, May 1981, Com. 29, No. 5, pp.621, 622, 633, 644-646, 655-659-(Article).
- Takahashi, K., et al., "The Audio Response System for Telephone Reservation", *U.D.C.*
- Oka, Y. et al., "Development of Ventilating Equipment for Shinkansen Train", *U.D.C.-*(Articles In Japanese).
- Pagones, M.J., et al., "New services follow increased digitization on the long-haul transmission network", *AT&T Bell Laboratories Record*, 1983, vol. 61, pp. 25-33-(Article).
- "New phone service tells customer who's calling", *Bell Laboratories Record*, 1984, vol. 62, p. 9-(Article).
- Hirschman, C.B., et al., "LASS: Putting the telephone customer in charge", *Bell Laboratories Record*, 1985, vol. 63, pp. 10-16-(Article).
- "AT&T building communications network for Defense Department" and "AT&T inaugurates pay-per-view TV", *Bell Laboratories Record*, 1986, vol. 64, p. 2-(Article).
- "Power to...", *Dialogic Corporation*, Littleton Road, -(unidentifiable Article).
- "Representative Customer List For Interface Technology's Total Entry System", "Toes Solutions-Pharmaceutical Manufacturer", "The Voice Response Solution For Answering Customer/Sales Calls", "Toes Solutions-Orthopedic Equipment" and "Toes Solutions-Convenience Store"-(Articles).
- Lummis, R.C., "Speaker Verification: A Step Toward the 'Checkless' Society", *Bell Laboratories Record*, pp. 254-259-(Article).
- Flanagan, J.L., et al., "Synthetic voices for computers", *IEEE Spectrum*, Oct. 1970, vol. 7, No. 10, pp. 22-45-(Article).
- Rabiner, L.R. et al., "Computer Synthesis of Speech by Concatenation of Formant-Coded Words", *the Bell System Technical Journal*, May/Jun. 1971, pp. 1541-1558-(Chapter from a Book).
- Flanagan, J.L., et al., "Wiring Telephone Apparatus form Computer-Generated Speech", *The Bell System Technical Journal*, Feb. 1972, pp. 391-397-(chapter from a Book).
- Hornsby, Jr., Thomas G., "Voice Response Systems", *Modern Data*, Nov. 1972, pp. 46-50-(Article).
- Diffie, W., et al., "New Directions in Cryptography", *IEEE Transactions On Information Theory*, Nov. 1976, vol. IT-22, No. 6, pp. 644-654-(Article).
- Rosenthal, L.H., et al., "Automatic voice response: interfacing man with machine", *IEEE Spectrum*, Jul. 1974, vol. 11, No. 7-(Article).
- Rosenthal, L.H. et al., "A Multiline Computer Voice Response System Utilizing ADPCM Coded Speech", *IEEE Transactions on Acoustics, Speech, and Signal Processing*, Oct. 1974, vol. ASSP-22, No. 5, pp. 339-352-(Article).
- Flanagan, James L., "Computers that Talk and Listen: Man-Machine Communication by Voice", *Proceedings for the IEEE*, Apr. 1976, vol. 64, No. 4, pp. 405-415-(Article).
- Maisel, Ivan, "To Put Your Baseball Savvy on the Line, Pick Up The Phone And Call", *Sports Illustrated*, Sep. 3, 1984-(Script).
- Brown, Merrill, "Hollywood Saga: Who Bought J.R.?", *the Washington Post*, Final Edition, Oct. 14, 1984-(Script).
- "SPECIAL-OLYMPICS; Teams with baseball trivia expert Brad Curtis", *Business Wire*, Sep. 30, 1985-(Script).
- Lucas, W.A., et al., "The Spartanburg Interactive Cable Experiments in Home Education", *Rand Corp.*, U.S. Department of Commerce, National Technical Information Service, Feb., 1979-(Publication).
- Martin, James, "Viewdata And The Information Society", -(Book).

US 6,512,415 B1

Page 8

- Cummings, J.L., et al., "AT&T Network Architecture Evolution", *AT&T Technical Journal*, May/Jun. 1987, vol. 66, Issue 3, pp. 2-12-(Article).
- Yates, C.E., "Telemarketing and Technology: Perfect Business Partners", *AT&T Technology*, 1987, vol. 1, No. 3, pp. 48-55-(Article).
- Herr, T.J., "ISDN Application in Public Switched Networks", *AT&T Technology*, 1987, vol. 2, No. 3, pp. 56-65-(Article).
- "Only the best. Only from Florafax", *Florafax*-(Advertisement).
- Aldefeld, B., et al., "Automated Directory Listing Retrieval System Based on Isolated Word Recognition", *Proceedings of the IEEE*, No. 1980, vol. 68, No. 11, pp. 1364-1379-(Article).
- Rabiner, L.R., et al., "On the Application of Embedded Training to Connected Letter Recognition for Directory Listing Retrieval", *AT&T Bell Laboratories Technical Journal*, Mar. 1984, vol. 63, No. 3, pp. 459-477-(chapter from a Book).
- Rosenberg, A.E., et al., "Recognition of Spoken Spelled Names for Directory Assistance Using Speaker-Independent Templates", *The Bell System Technical Journal*, Apr. 1980, vol. 59, No. 4, pp. 571-592-(Chapter from a Book).
- Schulman, Roger, "TeleLearning: The Computer Brings the Classroom Home" *Family Computing*, Sep. 1984, pp. 50-53-(Article).
- "ICS launches new ?-home interactive video service package", *Cable Vision*, Sep. 3, 1984, pp. 71/73-(Article).
- "Four-Line TeleClerk Calls, Answers, Stores, Surveys", *Hardcopy*, Jan. 1985, vol. 14, No. 1-(Article).
- "The Remarketing of Prestel", *Which Computer?* Aug. 1984, pp. 106, 107 and ?-(Article).
- "Peripheral Speaks On Phone", *Hardcopy*, Dec. 1984-(Article).
- "The voicestar Series By Periphonics", *Periphonics*, Jan. 1986-(Publication).
- "Bank-From-Home system by Periphonics Corporation", "Bill Payment Success Story", *Periphonics Corporation*, "A History of Imagination", *Periphonics*, "Banking Success Story", *Periphonics Corporation*, "DataVoice and the PDT II", *Periphonics Corporation*, "Banking Success Story", *Periphonics Corporation*-(Brochures).
- Page from *What's new in Computing*, Apr. 1985-(Article).
- Page from *Today*, A Compuserve Publication, Jun. 1985-(Article).
- Page from *Computer Communications*, Feb. 1984, vol. 7, No. 1-(Article).
- Gits, Victoria, "Interactive device doesn't interrupt telephone calls", *Cable Vision*, Jun. 17, 1985, p. 20-(Article).
- Cuilwik, Tony, "Reach Out & Touch The Unix System", *Unix Review*, Jun. 1985, pp. 50, 52, 53, 56-(Article).
- Blackwell, Gerry, "Dial-a-Quote: first Canadian commercial audiotex service", *Computing Canada*-(Article).
- Applebaum, Simon, "Two-way television", *Cable Vision*, Aug. 8, 1983, p. 66-(Article).
- Sw??ne, Michael, "Fiber-optic TV network lets viewers talk back", *Info World*-(Article).
- Morrill, C.S., et al., "User Input Mode and Computer-Aided Instruction", *Human Factors*, 1968, 10(3), pp. 225-232-(Chapter from a Book).
- Results of Lexis Search Request for "Dial Info or Dialinfo", Date of Search Apr. 13, 1992, pp. 1-38.
- Results of Lexis Search Request for "Phone Programs or International Information Network", Date of Search Apr. 15, 1992, pp. 1-35.
- Van Gieson, Jr. W.D., et al., "Machine-Generated Speech For Use With Computers, and the problem of fitting a spoken word into one half second", *Computers and Automation*, Nov. 1968, pp. 31-34-(Article).
- Patel, Jay, "Utility of voice response system depends on its flexibility", *Bank Systems & Equipment*, Dec. 1988, pp. 101-103-(Article).
- Buron, R.H., "Generation of a 1000-Word Vocabulary for a Pulse-Excited Vocoder Operating as an Audio Response Unit", *IEEE Transactions On Audio And Electroacoustics*, Mar. 1986, vol. AU-16, No. 1, pp. 21-25-(Article).
- Gaines, B.R., et al., "Some Experience in Interactive System Development and Application", *Proceedings of the IEEE*, Jun. 1975, vol. 63, No. 6, pp. 894-911-(Article).
- "Application For Registration of Equipment To Be Connected To The Telephone Network", *Federal Communication Commission*, FCC Form 730.
- Dudley, Homer, "The Vocoder", Circuit Research Department, Dec. 1939, pp. 122-128-(Chapter from a Book).
- "Voice Response System Order Entry, Inventory Control". "Vendor Index", *Audiotex Directory & Buyer's Guide*, Fall/Winter 1989/90, pp. 114-156.
- Frances, M., et al., "Input Devices For Public Videotex Services", *Human-Computer Interaction INTERACT '84*, 1985, pp. 171-175-(paper).
- Labrador, C., et al., "Experiments In Speech Interaction With Conventional Data Services", *Human-Computer Interaction-INTERACT '84*, 1985, pp. 225-229-(paper).
- Long, J., et al., "Transaction Processing Using Videotex or: Shopping on Prestel", *Human-Computer Interaction-INTERACT '84*, 1985, pp. 251-255-(paper).
- Electrical Communication*, 1981, vol. 56, Nos. 1-4, pp. 1-110-(Paper).
- Conway, R.W., et al., "Tele-CUPLA: A Telephone Time Sharing System", *Communication of the ACM*, Sep. 1967, vol 10, No. 9, pp. 538-542-(Article).
- Marill, T., et al., "DATA-DIAL: Two-Way Communication with Computers From Ordinary Dial Telephones", *Communications of the ACM*, Oct. 1963, vol. 6, No. 10, pp. 622-624-(Article).
- Witten, I.H., "Communicating With Microcomputers", pp. 121-158-(chapter from a Book).
- "Call-It-Co. Hangs Up On Dial-It In Four Markets", *The 976 Exchange*, 1984, vol. 2, pp. 1-6 (Article).
- "DECtalk Help Boston's Shawmut Bank Cut Costs And Improve Service", *Digital*-(Article).
- "VTK 81 Voice Computer", *Voicetek*, 1987 (Brochure).
- "How a computerized "Voice" Answers Customers' Inquiries", *Bank Automation Newsletter*, Feb. 1985, vol. 19, No. 2 (Article).
- Rickman, J., et al., "Speech Synthesizers-Communications Interface-Implementing A Touch Tone Telephone Talker With DECTalk", *The DEC Professional*, May 1985, pp. 38, 39, 42-44 (Article).
- "DECTALK DELIVERS", *Digital Review*, Sep. 1985-(Article).
- "DECTalk turns a telephone into a terminal", "UNIX and Digital", "Legal protection for semiconductor chips", "Product safety", -*DECWORLD*, Apr. 1985, vol. 9, No. 2, pp. 1, 3, 5, 6-8-(Article).

US 6,512,415 B1

Page 9

- "DECtalk: A New Text-to-Speech Product", *Digital Guide-line*, Mar. 1984, vol. 8, No. 3, pp. 1-8-(Article).
- Straight Talk*, A Newsletter About the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 1, pp. 1-6.
- Straight Talk*, A Newsletter About the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 2, pp. 1-7.
- Straight Talk*, A Newsletter About the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 3, pp. 1-8.
- Straight Talk*, A Newsletter About the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 1, No. 4, pp. 1-8.
- Straight Talk*, A Newsletter About the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 2, No. 2, pp. 1-8.
- Straight Talk*, A Newsletter About the DECTalk Speech Synthesizer from Digital Equipment Corporation, vol. 2, No. 4, pp. 1-8.
- Various References/Articles attached with a letter from Smithwin Associates, dated Apr. 22, 1992: Riley, A.A., "Latest: 2-way communication by computer and telephone".
- ?evens, W. ?, "Computer Helps Children to Add", *The New York Times*, Apr. 20, 1970.
- Harvey, R.W., *Times*, The Kiplinger Magazine.
- "Hardware for the 'cashless society'", *Electronic Design* 3, Feb. 4, 1971, p. 26.
- Tennant, R.P., "Advanced credit system smooths operation and hastens payout", *Data Processing Magazine*, Jun. 1971, vol. 13, No. 6, pp. 34-35.
- "Computers that talk back to you", *Business Week* ??.
- Smith, Gene, "Chatting Via Computer", *New York Times*, Sep. 12, 1971.
- EDP Weekly*, (unidentifiable Article).
- "Did Anybody Here Call a computer?", *Data Management*, Feb. 196?
- Skala, Martin, "Straight talk from a Computer" *Christian Science Monitor*, Jun. 14, 1973.
- "Computer for Watergate Probe", *Science*, Jun. 15, 1973.
- "Tapping AT&T for a \$50-million refund", *Business Week*, Jun. 9, 1973.
- "Distrust of computer kills home service plan".
- Scherer, Ron, "Chitchat with a computer", *Christian Science Monitor*, Apr. 16, 1975, p. 2.
- "Trying Out the Pay-By-Phone Service", *Technology Review*, Mar./Apr. 1976, p. 15.
- "Pentagon seeks more control", *Electronics*, Apr. 5, 1976. p. 39.
- "Everyman's Computer Terminal", *Industrial Research*, Mar./Apr. 1976, p. 14.
- "DOD could save on test equipment".
- "Talking computer speeds Ford parts", Apr. 25, 1976.
- "Customers of Ten Banks Paying Bills by Phone", *Computer World*, 1976, p.12.
- "FAA to test computerized voice response to queries for pilots", *Electronics*, Nov. 25, 1976, p. 43.
- Miller, F.W., "Voice Response Comes to Life with Order Entry", *InfoSystems*, Oct. 1981. pp.62/64.
- Suppes, Patrick, "University-Level Computer-Assisted Instruction At Stanford: 1968-1980", *Institute for Mathematical Studies In The Social Sciences, Stanford University*, 1981, pp. 589-716.
- Lerner, E.J., "Products that talk", *IEEE spectrum*, Jul. 1982, pp. 32-37.
- Carlsen, Clifford, "Megaphone plans to blare message on national scale", *Time*, Mar. 2, 1987.
- Michelson, Marlene, "All kinds of information at your fingertips by phone" *Business Times*, Sep. 8, 1986, vol. 3, No. 19.
- Lacter, Mark, "At Megaphone, It's Always Show Time", *San Francisco Chronicle*, Jun. 9, 1986.
- Table of Contents, *Megaphone Press Book*, pp. 1-3.
- "Miss Simpson, will you dial-a-joke for me please?", Cartoon.
- Lacter, Mark, "At Megaphone, It's always Show Time", *San Francisco Chronicle*, Jun. 9, 1986, Year No. 123, (different perspective).
- Lacter, Mark, "Narrating Fantasy Messages-It's No Dream Job", *San Francisco Chronicle*, Jun. 9, 1986.
- "Megaphone Serves High-Tech Showbiz", *San Francisco Chronicle*, Jun. 9, 1986;
- "Megaphone Reaches Unique Market", *San Francisco Chronicle*, Jun. 9, 1986.
- Feuer, Jack, "Asher/Gould: Megaphone Dials-a-Shop", *Adweek*, May 12, 1986.
- Symonovich, Steve, "Novelty over for phone porn vendors", and continuation "Big firms breathing down necks of small phone porn outfits" *San Francisco Business Journal*, May 5, 1986.
- Wilke, John, "A 'Dream'Business that's Just A Phone Call Away", *Information Processing*.
- Ketcham, D.E., "Dial-a-You-Name-It", *San Francisco Chronicle*, 1986.
- Carter, Alan, "What?You didn't know Erica was engaged again?", *Daily News*, Mar. 12, 1986.
- "Firm plugs into sales with time, temp lines", *Crain's New York Business*, Mar. 3, 1986, vol. II, No. 9.
- Pitts, Gail, "Phone-in trivia games ring up profits", *The Denver Post*, Feb. 3, 1986.
- "Merge Towards Success", IIN and Megaphone, *the 976 Exchange*, Winter 1976, vol. 4.
- Nelson, David, "From dating to soap operas, 976 numbers come on line", *San Jose Business Journal Magazine*, Jan. 27, 1986.
- Greengard, Samuel, "Dial-A-Deluge", *Business*, Nov. 1985.
- "Numbers, Please", *Business*, Nov. 1985.
- "The 976 Telelease Co.", *Business Opportunities Journal*, Dec. 1985.
- "One-time refund for '976'charges" *San Francisco Examiner*, Nov. 7, 1985.
- Kent, Debra, "Interactive phone network stretches for calls", *Advertising Age* Oct. 17, 1987.
- "Making Your Phone Talk To Computers", *U.S. News*, Sep. 23, 1985.
- Mulqueen, John, "Int'l Information Network Eyes Contact With British Telecom", *Communications Week*, Sep. ??.
- Moorhead, Derrol, "Humor, romance: just a call away", *Rocky Mountain Collegian*, Sep. 19, 1985, vol. 94, Iss. 32.
- Keppel, Bruce, "Move Under Way to Curb Abuse of Popular Dial-It Service", *Los Angeles Times*, Sep. 1, 1985.
- "Dial-a-stock", *Forbes*, Aug. 1985.
- Sowa, Tom, "Games people play now include phone trivia", *Spokesman-Review*, July 1985.
- Dougherty, P.H., "Advertising Telephone Is Growing As Medium", *The New York Times*, Jul. 17, 1985.

US 6,512,415 B1

Page 10

- Larson, Judy, "976 numbers entice adults--and kids", *Fremont Argus*, Jul. 8, 1985.
- Barbieri, Richard, "Prime Time for the Telephone", *Channels*, May/Jun. 1985, pp. 54-55.
- "Bank Provides Financial Fuel To Fast Track Company", *The Financial Center Bank*, First Quarter 1985, vol. II, No. 1.
- "Don't Phone Santa", *San Francisco Chronicle*, Letters to the Editor, Mar. 29, 1985.
- Carvalho, Deborah, "Will Hillary find happiness with Bob?", *Contra Costa Times*, Mar. 15, 1985.
- Murphy, Win, "Dial-a-romance", Mar. 13-19, 1985.
- ? Martha, "Love, laughs, luck: Just a phone call away", *Burlington County Times*, Feb. 17, 1985.
- Robinett, Stephen, "Blood From A Rock", *Venture*, Jan. 1985, pp. 38-41, 44-45.
- Du Brow, Rick, "Lates hot lines for instant trivia pursuit", *Los Angeles Herald Examiner*, Dec. 6, 1984.
- "Keep up with your favorite soap operas", *Contra costa Times*, Nov. 30, 1984.
- Hanna, Barbara, "Inside Radio/TV".
- Behr, Debra, "Victory'makes and writes its own on-the-road news", and "Whose calling? Michael fans most likely...", *Los Angeles times*, Nov. 29, 1984.
- "Newcomer MEGAPHONE Has Magnanimous Goals", *The 976 Exchange*, Fall 1984, vol. 2.
- "Phone Santa", *Vecaville Reporter*, Nov. 10, 1984.
- "Dial 976 for Profits", *Time*, Sep. 3, 1984.
- Pendleton, Mike, "For A Fee Your Phone Can Inform", *Burrelle's*, Jul. 19, 1984.
- "Phone numbers to get details about soaps", *Burrelle's*, Jul. 18, 1984
- Gansberg, A.L., "976 phone prefix as new entertainment fad", *The Hollywood Reporter*, Jun. 21, 1984.
- Carvalho, Deborah, "Another 'GH' actor discontented with the soap", *Contra Costa Times*, May 26, 1984, p. 4.
- "Keep up with your favorite soap operas", *San Fransisco Examiner*.
- Du Brow, Rick, "Dial-a-soap'service offers daily TV summaries", *Los Angeles Herald Examiner*, Apr. 26, 1984.
- News briefs, Feb. 1966.
- Martin, J., et al., "The Computerized Society--An appraisal of the impact of computers on society over the next fifteen years", Chapter 10, pp. 211-226-(Chapter from a Book).
- New products, *Datamation*, Jul. 1966, vol. 12, No. 7, pp.7/89-(Article).
- Meacham, L.A. et al., "Tone ringing and Pushbutton Calling", *The Bell System Technical Journal*, 1958, pp. 339-360-(Book).
- Suppes, Patrick, "The Uses of Computers in Education", *Scientific American*, Sep. 1966, vol. 215, No. 3, pp.-(Article).
- Bruckert, E., et al., "Three-tiered software and VLSI aid developmental system to read text aloud", *Electronics*, Apr. 21, 1983, pp. 133-138-(Article).
- Hochman, David, "Implementing Automatic Number Identification", *Telecommunications*, Dec. 1978, vol. 12, No. 12-(Article).
- Martin, James, "Telecommunications and the Computer", 2nd Edition, Introduction, pp. 20-23, Chapter 5, pp. 94-95, Chapter 18-(Chapter from a Book).
- Martin, James, "Telematic Society", Chapter 6, pp. 45-48, Chapter 9, pp. 67-69, Chapter 20, pp. 181-188-(Chapters from a Book).
- Martin, James, "The Wired Society", pp. 53-55, 71-79, 99-100, 204-205, 229-231-(Chapters from a Book).
- Martin, James, "Future Developments in Tele-Communications", 2nd Edition, Box A, Chapter 1, p. 5, Chapter 7, pp. 95-111, Chapter 9, pp. 149-105, Chapter 12, pp. 207-209, Chapter 18, pp. 310-311, Chapter 19, pp. 314-317, 320, Chapter 20, pp. 330, Chapter 23, pp. 379-401-(Chapters from a Book).
- Ferrarini, E.M., "Infomania", pp. 59-61, 176-177, 191, 213-214, 223, 245, 250, 257, 285, 286-(Book).
- Kimura, Y., et al., "Audio Response System", vol. 55, No. 10, pp. 49-54-(Article in Japanese).
- Dial Infro Articles (various articles with varios dates) (R0016101-R0016188).
- Svigals, J., "Security Method for Remote Telephone Banking," IBM Technical Disclosure Bulletin, vol. 23, No. 12, May 1981, pp. 5306-5307 (pb424).
- AT&T Conversant Voice Response Systems Historical Overview, Jan. 1988 (FD 023585-FD23596).
- "All About Automated Attendant Systems," Datapro Research Corporation, Mar. 1987 (SM 1000682-SM 1000691).
- "New Product-Dytel's Automated Switchboard Attendant," reprinted from Business Communications Review, Mar.-Apr. 1984, pp. 39-41 (SM10006976-SM1000699).
- Arbogast, James G. et al., "Home Diabetes Monitoring Through Touch-Tone Computer Data Entry and Voice Synthesizer Response," Annual Symposium on Computer Applications in Medical Care 8th Care Proceedings-Eighth Annual Symposium on Computer Applications in Medical Care, 1984 (MMI 020731).
- Perdue, Robert J., et al., "AT&T Voice Processing System Architectures, ", Technical Journal, Sep./Oct. 1990, pp. 52-60 (MMI 024142-MMI 024151).
- Sable, E.G., et al., "AT&T Network Services Architecture Capabilities, Administration and Performance," AT&T Technical Papers, International Switching Symposium-ISS '87, AT&T Network Systems, Mar. 15, 1987.
- "The Stored Program Controlled Network", The Bell System Technical Journal, Sep. 1982.
- The World's Telephones, A Statical Compilation as of Jan. 1980, AT&T Long Lines, 1981 (Book).
- Engineering and Operations in the Bell System, AT&T Bell Laboratories, 1983 (Book).
- Joel, A.E., "A History of Engineering and Science in the Bell System, Switching Technology (1925-1975)," Bell Telephone Laboratories, 1982 (Book).
- "ISDN-Proceedings of the conference held in San Francisco, Nov. 1986," OnLine, New York: London.
- Raack, G. A. et al., "Customer Control of Network Services," IEEE Communications Magazine, Oct. 1984 (A21717089) also ISS 84, Florence Italy, May 1984.
- Soderberg, J.H., "Machines at your Fingertips," Bell Laboratories Record, Jul. 1969 (A2171715).
- Gawrys, G.W. et al., "A New Protocol for Call Handling Functions for the SPC Network," Globecom '82 Conference Record, Nov./Dec. 1982.
- Buss, C.M., "Tuning the Human/Machine Interface for AT&T Advanced 800 Service,"IEEE, Jul. 1985.
- Asmuth, R.L., et al., "Transaction Capabilities for Network Services," Globecom '85 IEEE Global Telecommunications Conference, New Orleans, Dec. 1985.

US 6,512,415 B1

Page 11

- Mahood, Gerald K., "Human Factors in TOUCH-TONE Data Systems," Bell Laboratories Record, Dec. 1971 (A21717170).
- "4 ESS System Evolution," Bell System Technical Journal, Aug. 1981.
- Takano, H., "Characteristics of Multipair Exchange Area Telephone Cable with Cellular Polyethylene Insulation by Gas Injection Blowing", p. 55-(Article in Japanese).
- Takahashi, T., et al., "SR-2000 Voice Processor and Its Application", *NEC Research and Development*, 1984, No. 73, pp. 98-105-(Paper).
- "Concept Diagram Voicemail International System", "Voicemail Instruction Manual", *Televoice International*, Jun. 1981, Index.
- Eckhouse, John, "Voice mail spells relief for phone frustration", *San Francisco Examiner*, Feb. 7, 1982-(Article).
- Meade, Jim, "Throw away those pink Call-back slips", *InterOffice*, Jan./Feb. 1984, vol. 3, No. 1-(Article).
- Welsh, Jack, "Everybody's Talking About Talking Bouquets", *Design for Profit*, Spring 1986, pp. 7-10-(Article).
- Mosco, Vincent, "Pushbutton Fantasies", Contents, Chapter 3 and 4, pp. 67-118-(Chapters from a Book).
- Bretz, Rudy, "Media for Interactive Communication", Chapter 5, pp. 110-116, Chapter 7, pp. 143-153-(Chapters from a Book).
- Robinson, G., et al., "'Touch-Tone' Teletext A Combined Teletext-Viewdata System", *IEEE Transactions on Consumer Electronics*, Jul. 1979, vol. CE-25, No. 3, pp. 298-303-(Article).
- Voice News, Mar. 1982.
- Voice News, Jun. 1982, *William W. Creitz*.
- Voice News, Oct. 1982, p. 5.
- Voice News, Nov./Dec. 1983.
- "Consultant Report 28?", *AIS American Bell Advanced Information Systems*, Apr. 1983, pp. 27, 118-119, 123-124-(Report).
- "T-1 Board Sets Deliver High Performance All Digital T-1 Solutions", *NMS Natural MicroSystems*-(Product Bulletin).
- "VBX Product Family Overview", *NMS Natural MicroSystems*pp. 1-20-(Brochure).
- "Machine Operation Manual", May 12, 1978, Issue 1, pp. 1-3, 9-10-(Manual).
- Davey, J.P., "Dytel Western Region Sales Training Manual", 1985-(Manual).
- Gutcho, Lynette, "DECtalk-A Year Later", *Speech Technology*, Aug./Sep. 1985, pp. 98-102-(Article).
- Daniels, Richard "Automating Customer Service", *Insurance Software Review*, Aug./Sep. 1989, pp. 60-62-(Article).
- Golbey, S.B., "Fingertip Flight Service", Oct. 1985-(Article).
- "ARO Goes Pushbutton", *Newsletter*, Nov. 1985, p. 9-(Article).
- "ROLM Centralized Attendant Service", *ROLM Corporation*, 1979.
- "AIS, Versatile Efficient Information Service", Fujitsu Limited, 1972, pp. 153-162-(Brochure).
- Smith, S.L., et al., "Alphabetic Data Entry Via the Touch-Tone Pad: A Comment", *Human Factors*, 1971, 13(2), pp. 189-190-(Book).
- Holtzman, Henry, "Still an Infant Technology VOICE MAIL", *Modern Office Technology*, Jun. 1985, pp. 78-80, 82, 84, 90-(Article).
- Leander, Monica, "Voice Response-A Technology for Solving Management Problems", *Speech Technology*, Mar./Apr. 1986, pp. 50-52-(Article).
- Stolker, Bud, "CompuCorder speech storage and output device. (evaluation)", *Creative Computing*, Jul. 1983, pp. 1-7.
- Witten, I.H., et al., "The Telephone Enquiry Service: a man-machine system using synthetic speech", *Int. J. Man-Machine Studies*, Jul. 1977, 9, pp. 449-464-(Book).
- Gould, R.L. "Fidelity's Automated Voice Response System", *Telecommunications*, Jan. 1981, pp. 27-28-(Article)
- "Fidelity Automated Service Telephone", *Fidelity Group*, 4 pages-(Manual).
- "Data Set 407 Interface Specification", *Manager-Data Systems & Operations*, Jun. 1975, Issue 2, pp. 1-69 plus Table of Contents-(Manual).
- Fitzwilliam, J.W., et al., "Transaction Network, Telephones, and Terminals", *The Bell System Technical Journal*, Dec. 1978, vol. 57, No. 10, pp. 3325-3537-(Book).
- Inbound Outbound*, May 1988, complete issue.
- Koch, Helmut, "Concord Design Services, Inc. Corporate Description", *ExacomFederal Communications Commission*, FDC Form 484, Registration, Registrant: Concord Design Services, Inc. *Exacom Telecommunication Systems*-Brochure.
- General Description Installation and Operation Manual for Direct Inward Dial (DID) Trunk Interface Unit, *Exacom Telecommunication Systems*, Nov. 21, 1989, Issue 3-(Manual).
- General Description Installation and Operation Manual for Answering Service Monitor System, *Concord Design Services, Inc.*, Dec. 19, 1986, Issue 1-Manual.
- "Dialogic Voice Solutions", *Dialogic Corporation*, pp. 1-72.
- "Why Is T-1 Important And How Can It Be Used", *Dialogic Corporation*, Application Note, pp. 1-6.
- "Use of Dialogic T-1 For Telemarketing Applications", *Dialogic Corporation*, Application Note, pp. 1-6.
- "Use of Dialogic T-1 In Operator Service Applications", *Dialogic Corporation*, Application Note, pp. 1-6.
- "Use of Dialogic T-1 In Telephone Company Networks", *Dialogic Corporation*, Application Note, pp. 1-10.
- "Use of Dialogic T-1 Equipment in CPE Gateways", *Dialogic Corporation*, Application Note, pp. 1-4.
- "Integrating Analog Devices into Dialogic-Based T-1 Voice Processing Systems", *Dialogic Corporation*, Application Note, pp. 1-16.
- "Use of Dialogic Components in Automatic Number Identification (ANI) Systems", *Dialogic Corporation*, Application Note, pp. 1-16.
- "Dialogic Unit Pricing", pp. 1-6.
- "Voice '92 Spring Conference & Exposition", 1992, pp. 1-24-(Brochure).
- "Telecom Developers '92", Jan. 1992-(Advertisement).
- Newton, Henry, "The Sheer Thrill Of It All", *Teleconnect*, May 1991.
- "AFIPS Conference Proceedings", 1987 National Computer Conference, Jun. 15-18, 1987, Chicago, Illinois "Dynamic Network Allocation".
- Inquiry Letter To The F.C.C., From Attorneys For the Prior Title Holder Seeking Rulings That A Particular Game Wold Not Be Considered A Lottery Under F.C.C. Reply Letter From The F.C.C. To The Inquiry Letter Stating The Requested Rulings.

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Page 12

Reply Letter From The F.C.C. To The Inquiry Letter Stating The Requested Rulings.

A page (page 7) from literature on the Charles Schwab corporation, which is not dated nor identified.

A page (page 4) from an annual report dated Mar. 1, 1989, though the actual date on which the report was distributed to the public is unknown.

An early brochure based on a Mar. 1989, survey by Charles Schwab & Co, Inc.

A trademark scan (U.S. Federal) indicating a first date of use for Telebroker in Jun. 18, 1988.

Bulfer, Andrew F., "AT&T's Pay-Per-View Television Trial", published in AT&T Technical Journal, May/Jun., 1987.

Friedes, A., et al., "ISDN opportunities for large business-800 service customers," IEEE International Conference on Communications '86, Jun. 22-25, 1986, vol. 1, pp.28-32.

Allyn, Mark R. et al., "Planning for people: Human factors in the design of a new service," Bell Laboratories Record, May 1980, pp. 155-161.

Hanson, Bruce L. et al., "No. 1A VSS New custom calling services," Bell Laboratories Record, Jun. 1980, pp. 174-180.

"Calling your computer is as easy as calling your broker, says AT&T", Record, Nov. 1985.

Singleton, L.A. "Telecommunications in the Information Age", Chapter 12, pp. 115-125-(Chapter from a Book).

Weitzen, H.S., "Telephone Magic", pp. 28-31, 38-39, 54-55, 62-67, 70-79, 82-85, 88-91, 106-115, 118-121, 126-127, 134-137, 176-177, Index-(Chapters from a Book).

Weitzen, H.S., et al., "Infopreneurs", pp. 18-19, 138-145, 206-209, Index-(Chapters from a Book).

Sullivan, Kathleen, "Paper firm relies on voice-based inventory system", IDG Communications, Inc., Sep. 10, 1984-(Script).

"VTK Training Section" and "Disk Initialization Procedures for VTK-30/60", Voicetek Corporation-(Manual).

"VoiceStor Systems Integration Guide", Voicetek Corporation, May 2, 1983-(Manual).

"VTK 60 Voice Computer-Technical Description", Voicetek Corporation, Oct. 1986-(Manual).

"Voicetek VS-50 Telephone Interface System", Apr. 25, 1984, System Integration Guide-(Manual).

"VTK Voice System-Programmers Guide", Voicetek-(Manual).

"Disk Initialization Procedures for VTK-30/60", Voicetek Corporation-(Manual).

"VTK81 Voice Computer-Technical Description", Voicetek Corporation, Oct. 1986-(Manual).

"VTK Voice System-VTK/CE Guide", Voicetek, Jul. 6, 1987-(Manual).

Newton, Harry, "Newton's Telecom dictionary", Telecom Library Inc., 1991-(Advertisement).

"1987 Buyers Guide", Teleconnect, Jul. 1987, pp. 194, 197-210-(Brochure).

Syntellect Inc.-Advertisements.

Various copies of Business cards.

Guncheon, M.C., "The Incredible Dial-A-Message Directory", Contemporary Books, Inc., 1985-(Directory).

"Voice Box Maintenance Manual", Periphonics, 1986-(Manual).

"Voicepac Maintenance Manual", Periphonics, 1984-(Manual).

Dyer, Ellen, "Wichita Firm Sells 25% Share", Dec. 14, 1987, and "Spectrum Carving Role in Volatile Business", Jul. 7, 1986, Search Results.

"Don't Miss The Unique Gift Idea Of The Year", Yam Educational Software, 1987-(Advertisement).

"Welcome to the future of advertising", Teleline, Inc., 1990-(Presentation).

"Greeting Card Project", Teleline, Inc., Nov. 7, 1988-(Flow Chart).

Sharkey, Betsy, "Dialing for Dollars and Data", Adweek, Nov. 16, 1987, pp. 6-8-(Article).

Gay, Verne, "CBS may tie rates to buying p?", 1988-(Article).

Flanagan, J.L., et al., "Synthetic Voices For Computers", IEEE International Conference on Communications, 1970, pp. 45-9-45-10-(Conference Record).

Rabiner, L.R., et al., "Computer Voice Response Using Low Bit Rate Synthetic Speech", Digest IEEE 71 International Convention, Mar. 22-25, 1971, p. 1-2, Fig. 1-2-(Paper).

"DT1000 DIGITALKER Speech Synthesis Evaluation Board", National Semiconductor Corp., Oct. 1980-(Manual).

"Data Set 407C Interface Specifications November 1977", Bell System Technical Reference, Nov. 1977, pp. 1-50-(Paper).

Broomfield, R.A., et al., "Making a data terminal out of the Touch-Tone telephone", Electronics, Jul. 3, 1980, pp. 124-129-(Paper).

Godfrey, D., et al., "The Telidon Book-Designing and Using Videotex Systems", pp. 1-103-(Book).

"Industry Marketing Bulletin", Honeywell EDP Wellesley Hills, Aug. 9, 1967.

"Honeywell Communications Configuration Charts And Aids In Designing", Data Communications, pp. 3-1 -3-7 and A.

"Burroughs Audio Response System", Reference Information for Sales Representatives, pp. 1-6, "New Product Announcement", Burroughs Corporation, Feb. 5, 1968.

"Stand-Alone Lockbox Application Voice Response (Slave) Communication System Functional Specification", Cognitronics Corporation, Feb. 19, 1982, p. 21.

"Unlock lockbox reporting, with cognitronics Voice Response Communications System/Banking.", Speech-maker a division of Cognitronics Corporation.

"Voice Response for Banking", Cognitronics Corporation-(Brochure).

"Voice response application brief", Cognitronics Corporation-(Brochure).

"Instant credit authorization is an easy touch when any telephone is a voice responsecomputer terminal!", Speech-maker a division of Cognitronics Corporation-(Article).

Slutsker, Gary, "Relationship marketing", Forbes, Apr. 3, 1989-(Article).

Finnigan, P.F., "To Our Shareholders", Jun. 1985, Apr. 7, 1986, Apr. 10, 1987-(Letters).

Finnigan, P.F., "Our guest", Radio-Schweiz AG Telekommunikation und Flugsicherung, Jan. 1983, pp. 12-14-(Bulletin).

"International Programs" (Voicemail).

Finnigan, P.F., "Voice mail", 1983 National Computer Conference, May 16-19, 1983, Anaheim, CA, pp. 375-377 and Abstract.

US 6,512,415 B1

Page 13

- "Conversations in Your Mailbox", *Software News*, Jan. 1985-(Article).
- Fredric, Paul, "Voicemail Int'l, Radio Page America To Offer A 'Pocket News Network'", *Communications Week*, Jul. 8, 1985-(Article).
- "Voice-Messaging System: Use It While You're In, Not Out", *Information WEEK*-(Article).
- "Corporate Performance-Companies To Watch", *Fortune*, Sep. 30, 1985-(Article).
- "Dream Weaver", *Jon Lindy*, Aug. 1986, pp. 32-35, 37-(Article).
- "Turn any telephone into a complete electronic message service", *Voicemail*-(Brochure).
- Pages from Company Brochure, *Televoice International, Inc.*.
- "VMI Big Talker", *Voicemail International, Inc.*-(Newsletter).
- "Newline", *Voicemail International, Inc.*, Oct. 1984 and Nov. 1984.
- "Voiceletter No. 1, " *Voicemail International, Inc.*, Dec. 1985.
- "A New, More Productive Way to Use the Telephone", *Voicemail International, Inc.*-(Brochure).
- "While You Were Out...?"-(Brochure).
- "For People Who Can't Afford To Miss Messages", *Voice-mail International, Inc.*-(Brochure).
- "Voicemail The electronic news service saves time, money and nerves", *Radio-Suisse Ltd.*, (Voicemail Agent for Europe)-(Brochure).
- "Are You Being Robbed of Your Time...?", *Voicemail International, Inc.*-(Brochure).
- "Voicemail Instruction Manual B-85", *Televoice International*, Nov. 1980-(Manual).
- "Local Telephone Numbers", (for Voicemail) and "Televoice Is As Easy As 1, 2, 3 !", *Televoice International*-(Manual).
- "Voicemail Instruction Manual C-25", *Televoice International*, Jun. 1981-(Manual).
- "Telephone Numbers", (for Voicemail) and "How to Use Voicemail", *Televoice International*-(Manual).
- "Message Receiving/Sending"(and others), *Voicemail International, Inc.*-(Manual).
- "You Can Use Voicemail To Send And Receive Messages At Anytime Anywhere In The World", *Voicemail International, Inc.*, 1981-(Brochure).
- "Advanced User Guide", *Voicemail International, Inc.*-(Manual).
- "Voicemail's Basic User's Guide", *Voicemail International, Inc.*-(Manual).
- "Welcome To Dowphone", *Dowphone*, Jan. 1986-(Manual).
- "Telephone 1-800 Check-PDR", *Officers of Medical Economics Company, Inc.*, 1986-(Circulation/Brochure).
- "Turn your telephone into an efficient electronic "Mailbox""", *Western Union*, Jan. 1984-(Brochure).
- "Western Union Voice Message Service User's Guide", *Western Union*, Jul. 1984-(Brochure).
- "PSA's 24 Hour reservation system", *PSA*, Sep. 1986-(Brochure).
- "To Better Serve Your Business, We're On Call Days, Nights and Weekends.", *Maryland Business Assistance Center*-(Brochure).
- "Voice Response: Breaks Through Call Blockage.", *Business Week*, Aug. 26, 1985-(Advertisement for Preception Technology Corporation).
- "Tools for heavy hitters", *Forbes*, May 6, 1985.
- "The Fidelity Automated Service Telephone", *Fidelity Group*-(Manual/Brochure).
- "Stockquote Hotline", *Norwest Brokerage Services*-(Brochure).
- "All You Need To Get The Stock Quotes And News You Want." *Dowphone*, 1984-(Advertisement).
- "The Most Respected Name In Telemarketing", *West Interactive Corporation*-(2 Brochures).
- Aarons, D., "The Voice of the 80's," *PC Magazine*, vol. 4, No. 5, Mar. 5, 1985, p. 114 (A21707135).
- "ACD 'Magic'from AT&T's Merlin," *Telecommunications Product Review*, vol. 13, No. 4, Apr. 1986 (A21708371).
- "Actor Promotes Phone Services," *Hammond Louisiana Star*, Aug. 23, 1984 (A21708860).
- Allerbeck, M., "Experience with the Voice Mail System EMS 2000 Info-Results of an Acceptance Study," *ISS '84 Florence*, May 1984, Session 14 A, Paper 6, p. 1.
- Amano, Fumio, et al., "Imagephone!!: Integrated Voice/Data Terminal With Hand-Drawing Man-Machine Interface," *IEEE*, 1985 (A03701430).
- Ambrosio, Johanna, "Electronic and Voice Mail; They're No Match for Each Other-Yet," *Computerworld*, May 19, 1986, p. 53 (A21708461).
- "American-Network: Files Complaint Against Pacific Northwest Bell," *Business Wire*, Jun. 4, 1986 (A21708495).
- "American-Network: Signs Letter of Intent to Merge L D Communications Long Distance Service into the Company," *Business Wire*, Aug. 14, 1984 (A21708856).
- Andrews, Edmund L., "Patents: Computer System Lets TV Audience Join Show," *The New York Times*, Dec. 24, 1988 (A01331146).
- Arnst, Catherine, Press Release, *Reuters*, Sep. 16, 1984 (A21708908).
- "AT&T Announces Major Additions to Telemarketing Products and Services," *Telephone News*, Dec. 14, 1987 (A21723927).
- "AT&T, AT&T Announces New Software Enhancements," *Business Wire*, Feb. 10, 1987 (A21707782).
- "AT&T Announces New Software Enhancements for its PBX," *PR Newswire*, Feb. 10, 1987 (A21707779).
- "AT&T CPU Puts Voice Recog on Any Phone," Article Source Unknown (A01354681).
- "AT&T Inaugurates Pay-Per-View TV," *Bell Laboratories Record*, Jan. 1986 (A21708191) repeated (A21716664).
- "AT&T's Digital MERLIN," *Telecommunications Product Review*, vol. 13, No. 7, Jul. 1987 (A21724743).
- "AT&T's Flagship System 75: A Comprehensive Analysis of the System 85's 'Little Cousin'," *Telecommunications Product Review*, vol. 11, No. 7, Jul. 1984 (A21724612).
- "AT&T Forms Unit to Sell Synthetic Speech Systems," *Wall Street Journal*, Sep. 10, 1985 (A01354689).
- "AT&T Plans Computer Unit," *The New York Times*, Sep. 10, 1985 (A01354690).
- "AT&T; Showtime's Viewer's Choice, Viacom Cable and AT&T to Test Pay-Per-View Ordering System," *Business Wire*, Dec. 5, 1985 (A21708103).
- "AT&T Sports Service," *PR Newswire*, Sep. 24, 1980 (A21710432).
- "The AT&T System 25," *Telecommunications Product Review*, vol. 13, No. 8, Aug. 1986 (A21706368).
- Press Release, *PR Newswire*, Nov. 1, 1984 (A21708963).
- AT&T Technical Journal-The 5ESS Switching System, vol. 64, No. 6, Part 2, Jul.-Aug. 1985 (A21723626).

US 6,512,415 B1

Page 14

- Excerpt from AT&T Technical Journal, Sep.–Oct. 1990, pp. 53–60 (A21723942).
- “Automated Switchboard Attendant Helps Insurance Company Control Net Expenses,” Communications News, Jul. 1985 (A21726011).
- Aversano, Nina, “The Telephone as Computer,” Review of Business, Fall 1989, p.5 (A21723928).
- Ayres, Paul, “Voice Response Pay-By-Phone Matures,” Computerworld, Nov. 9, 1979, p. 47 (A21725960).
- Baker, Janet M., “Voice-Store-And-Forward: The Voice Message Medium,” Speech Technology, Aug.–Sep. 1984 (A21724633).
- Bakke, Bruce B., “Electronic Voice Mailbox: Potential for Fast Growth,” BC Cycle, Jun. 29, 1984 (A21708785).
- Bakke, Bruce, B., “GTE’s ‘Voice Mailboxes’ Page the World,” U.P.I., Apr. 11, 1983 (A21713359).
- Barbetta, Frank, “AT&T Offers Digital PBX Enhancements,” Electronic News, vol. 30, Nov. 5, 1984, p. 69 (A21708967).
- Barbetta, Frank, “Custom Functions Offered in New AT&T Co. Package,” Article Source Unknown (A21726008).
- Barkauskas, B. J., et al., “Network Services Complex: A Generalized Customer Interface to the Telephone Network,” IEEE International Conference on Communications, Conference Record, vol. 2, Jun. 1983, p. 805 (A21725715).
- Barlin, David, “Switch-Hitter: A Data Man’s Guide to the World of Voice,” Data Communications, Oct. 1984, p. 114 (A21708926).
- Basso, Richard J., et al., “Expanding the Capabilities of the Traffic Service Position System,” Bell Laboratories Record, Feb. 1983, pp. 22–27 (A21724556).
- Belcher, Jerry, “Earthquakes in Mexico; U.S. Relief Includes Hardware, Experts; Cash Aid Suggested,” Los Angeles Times, Sep. 22, 1985 (A21708026).
- “Bell Files Tariffs on CO-Based Switching System in PA.,” Communications, Date Unknown (A21725944).
- Bell Laboratories Record, Aug. 1984, Cover Page and Table of Contents (A21708811).
- The Bell System Technical Journal, May–Jun. 1982 (A21709814).
- Excerpt from The Bell System Technical Journal, Oct. 1980, pp. 1384–1395.
- Bertoglio, O., et al., “An Interactive Procedure for Voice Messaging Services in a Traditional Network,” CSELT Technical Reports, vol. 12, Supplement 10, No. 3, Jun. 1984 (A21708755).
- Bingham, Sanford, “Groceries By Phone,” Inbound/Outbound, Aug. 1988 (A21725728).
- “Some Tips on Integration,” Inbound/Outbound, Aug. 1988 (A21725731).
- Black, Philip, “How ISDN Services Could Make or Break the Big Network,” Data Communications, Jun. 1984, p. 247 (A21708771).
- “‘Blast’from Data Systems Runs Under DG’s AOS/VS,” Computerworld, May 3, 1982, p. 38 (A21724423).
- Booker, Ellis, “How to Save Big Bucks on Phone Calls,” Computer Decisions, vol. 16, Nov. 15, 1984, p. 16 (A21708983).
- Borcherding, J. W., et al., “Customized Switching Systems,” ISS ‘84 Florence, May 1984, Session 14 A, Paper 4, pp. 1–5 (A21725533).
- Bowling, Tom, “Pay TV: A Pay-Per-Minute System Prototype,” Television: Journal of the Royal Television Society, Mar.–Apr. 1984, pp. 79–83 (A21724588).
- Brady, Erik, “Players, Fans Get Back in the Swing,” USA Today, Date Unknown (A21706710).
- Brady, Erik, “Resentful Fans Verbally Strike Back,” USA Today, Date Unknown (A21706709).
- Brooke, Jill, “A Hi-Tech Interactive TV Service is Planned,” New York Post, Jan. 20, 1989 (A01331148).
- Brown, Jim, “Contracts; Rolm Wins College Bid,” Network World, Mar. 9, 1987, p. 4 (A21707859).
- Brown, Jim, et al., “ICA Preview; AT&T May Steal Show,” Network World, May 6, 1986, p. 1 (A21708473).
- Brown, Jim, “PBX Market; Rolm Beefs up CBX Line Capacity,” Network World, Feb. 9, 1987, p. 4 (A21707777).
- Brown, Jim, “VMX 5000 Series; Voice Messenger Debuts,” Network World, Oct. 13, 1986, p.6 (A21706653).
- Brown, Jim, “Voice Mail; Rohm to Accounce New Low-Cost Phonenmail,” Network World, Feb. 2, 1987 (A21707763).
- Buckhout, Wayne, “Columbus–Born AT&T Computer Listens, Talks and Shows Promise,” Article Source Unknown, Sep. 10, 1985 (A01354692).
- Bulfer, Andrew F., et al., “A Trial of a National Pay-Per-View Ordering and Billing System,” NCTA, 1986 (A21724669).
- Burstyn, H. Paris, “Phone Features: The Next Wave,” High Technology, Jun. 1986 (A21726009).
- Capital Cities/ABC Video Enterprises, Inc. Teams with FDR Interactive Technologies to Explore Applications for New Telephone Technology, Capital Cities/ABC, Inc. Broadcast Group, Jan. 19, 1989 (A01331147).
- Carlson, Rolf, et al., “Text-To-Speech conversion in Telecommunications,” Proceedings of the Tenth International Symposium on Human Factors in Telecommunications, Jun. 1983, pp. 239–245 (A21725801).
- Press Release, PR Newswire, Dec. 5, 1985 (A21708106).
- Chapin, Dwight, “A Kids’ Game,” Article Source Unknown (A21706674).
- Charlish, Geoffrey, “Telephone Message that Failed to Get Across to the U. K.,” Financial Times, Jan. 16, 1986 (A21708203).
- Collins, Francis R., “Reality of Equal Access: Implementation Problems,” Telephone Engineer & Management, vol. 88, Sep. 1, 1984, p. 128 (A21708884).
- “Company News: Phone Service to be Tested,” The New York Times, Jan. 20, 1989 (A01331395).
- “Components,” Electronic News, 1984 (A21726007).
- “Computerized Telecommunications Switching Systems,” Article Source Unknown.
- Connolly, James, “Republican Convention Set to Test Telecommunications,” Computerworld, Jul. 9, 1984, p. 17 (A21708804).
- Conroy, Cathryn, “Audiotex Arrives,” Monitor, Date Unknown (W71189).
- “Corporate Preoccupation with Costs Spurs Telephone Management Sales,” Computerworld Focus, May 14, 1986, p. 13 (A21708457).
- Cox, John D., “Talk Into Telephone, Command a Computer,” The Sacramento Bee, Sep. 10, 2985 (A01354683).
- “CPU, PBX Vendors Drawings Alliances,” Computerworld, Apr. 23, 1984, p. 15 (A21708674).
- Crawford, K.E., et al., “4A Toll Crossbar Application,” The Bell System Technical Journal, vol. 57, No. 2, Feb. 1978, pp. 283–323 (A21716223).

US 6,512,415 B1

Page 15

- Croxall, L. M., et al., "Operational Experience with the 5ESS™ Switch," ISS Florence, Session 42 A, Paper 4, May 1984 (A21725550).
- Cummings, Steve, "Voice-Mail Systems Attract Tentative Interest," PC Week, vol. 3, No. 49, Dec. 9, 1986, p. 140 (A21707565).
- Curtis, Janice, "At a Turning Point, VMX Makes Moves to Boost Voice Messaging Business," Dallas Business Courier, vol. 2, No. 13, Section 1, Jul. 14, 1986, p. 19 (A21706328).
- Daniel, Heidi C., "Inventor Battles Computer Giants," South Florida Business Journal, Aug. 12, 1985 (A21707969).
- Press Release, Communications Daily, vol. 4, No. 177, Sep. 11, 1984, p. 7 (A21708903).
- Danner, Patrick, "Dial Info Charges Electronics Giant Disconnected Deal," San Francisco Business Times, vol. 2, No. 33, Apr. 18, 1988 (A21724767).
- Excerpt from Data Communications, Sep. 1985, pp. 399–410 (A21707991).
- Davis, Judith R., "Voice Messaging Systems," Patricia Seybold's Office Computing Report, vol. 10, No. 9, p. 1–28 (A21716964).
- Day, J. F., et al., "Networking Voice and Data with a Digital PBX," AT&T Technology, Date Unknown (A21707584).
- Whitten, W. B., II, "Advanced Interfaces Speed Delivery of Services," AT&T Technology, Date Unknown (A21707593).
- "Definity Announcement Includes Other New Products," Telecommunications Product Review, vol. 16, No. 3, Mar. 1989 (A2172758).
- DeLessio, N. X., et al., "An Integrated Operator Services Capability for the 5ESS System," ISS '84 Florence, May 1984, Session 22 C, Paper 3, pp. 1–5 (A21725538).
- Desmond, Paul, "Patented Call-Routing Tool Boon for Retail Industry; Instalink Will Use ISDN for Automatic Number ID," Network World, Aug. 1, 1988 (A21712653).
- "Dial-A-Drill," The New York Times, Jan. 20, 1969 (A21725951).
- "Dialing for Pennies," California Living Magazine, Aug. 12, 1984 (A21708855).
- "Distributed Data Processing and Messaging Systems," Data Communications, May 1986, p. 105 (A21708428).
- Dix, John, "AT&T Breathes New Life into its Switch-and-Wire Beast," Network World, Oct. 27, 1986, p. 1 (A21706662).
- Dix, John, "AT&T Tries Different Tack," Computerworld, Nov. 25, 1985, p. 19 (A21708097).
- Dix, John, "AT&T Unleashes 'Gazelle,'" Computerworld, Apr. 30, 1984, p. 2 (A21708097).
- Dix, John, "Enhancements Out for AT&T's High-End PBX," Computerworld, Nov. 12, 1984, p. 99 (A21708970).
- Brown, Jim, "VMX 5000 Series: Voice Messager Debuts," Network World, Oct. 13, 1986, p. 6 (A21706653).
- Dix, John, "Ford Motor Co.; Driving Down Costs with Voice Mailboxes," Network World, Jul. 14, 1986, p. 32 (A21706326).
- Dix, John, "Hello, This is a Voice Mail Recording," Network World, Jul. 14, 1986, p. 1 (A21706331).
- Dix, John, "Rolm; Long-Awaited Redwood to Debut at ICA Today," Network World, Jun. 2, 1986, p. 4 (A21708493).
- Dix, John, "Switch Management: DEC Tools Debut at ICA," Network World, Jun. 9, 1986, p. 8 (A21708497).
- Dix, John, "Unified Messaging; AT&T Reveals New Message Blueprint," Networkworld, Sep. 22, 1986, p. 1 (A21706473).
- Dorros, Irwin, "Evolving Capabilities of the Public Switched Telecommunications Network," Business Communications Review, Jan.–Feb. 1981 (A21725652).
- Dowd, Ann Reilly, et al., "Dollars from Dialing," Fortune, Mar. 16, 1987, p. 10 (A21707869).
- Drinkwater, Larry, "Voice Processing: An Emerging Computer ? Technology," Speech Technology, Aug.–Sep. 1984, pp. 50–54 (A21708826) (illegible).
- Edwards, M., "Digital PBXs Zero in on the Key Role as Hub of Office," Communications News, vol. 21, No. 12, Dec. 1984, p. 44 (A21708992).
- Egly, Diana G., et al., "Mnemonic Aids for Telephone-Based Interfaces," Proceedings of the Eleventh International Symposium on Human Factors in Telecommunications, Sep. 1985 (A21725818).
- Eichenwald, Kurt, "Just a Phone Call Away: More Dial-It Services," The New York Times, Apr. 16, 1988 (A21725852).
- Excerpt from Electrical Communication Facilities (in Japanese), vol. 33, Nov. 9, 1981 (A21724248).
- "Electronic Switching: Digital Central Office Systems of the World," Edited by Amos E. Joel, Jr., IEEE Press, 1982 (A21716673).
- "Electronic Voice Mail Revolutionizing Communications," Tulsa Business Chronicle, vol. 5, No. 26, Jun. 30, 1986 (A21708510).
- Press Release, PR Newswire, Mar. 20, 1984 (A21708647).
- Elliot, Thomas, R., "A Voice in the Wilderness," Computerworld, Jun. 13, 1984, p. 76 (A21708779).
- Emerson, Jim, "Catalog Business," DM News, Dec. 15, 1985 (A21708115).
- Emerson, Jim, "Eliminating Live Operators," DM News, Dec. 15, 1985 (A21708114).
- Engelhardt, Robert M., "Island Paradise Gets System Update," Telephone Engineer & Management, vol. 88, Sep. 15, 1984, p. 104 (A21708904).
- Evans, S.A., et al., "Talking and Listening to the Conversant 1 Voice System," AT&T Technology, Date Unknown (A21710392).
- Fantel, Hans, "Video: Movies Hot Off the Tube," The New York Times, Mar. 29, 1987 (A21707890).
- "The Father of Voice Messaging," Network World, Nov. 1984, p. 57 (A21708942).
- Feldman, Robert, "New AT&T Packages Designed to Spruce up Systems 75/85," MIS Week, Jun. 2, 1986, p. 30 (A21725895).
- Fine, Happy, "Tavern on the Bluegrass," Eastern Basketball, Date Unknown (A21706749).
- "Firm Created After Patent Suit Against First Data," Reuters, Oct. 17, 1994 (A01331388).
- Fischell, David R., et al., "Interactive Voice Technology Applications," AT&T Technical Journal, Sep.–Oct. 1990 (A34100164).
- Foster, Robin Harris, "In the Forefront with Integrated Call Centers," AT&T Technology, vol. 7, No. 4, 1992 (A21712913).
- Froehlich, F. E., et al., "The Switched Network Transaction Telephone System," The Bell System Technical Journal, vol. 57, No. 10, Dec. 1978, pp. 3475–3485 (A21725995).
- Froelich, Leopold, "Are Smart Buildings a Dumb Idea? If They're Going to Prosper, Shared Service Providers Will Have to Move from Telephony into Office Automation," Datamation, vol. 31, Oct. 1, 1985, p. 101 (A21708046).

US 6,512,415 B1

Page 16

- Gates, G. W., et al., "Software," The Bell System Technical Journal, vol. 61, No. 5, May-Jun. 1982, pp. 863-883 (A21725913).
- Gawron, L. J., et al., "Scanned-Image Technologies Bring New Ways to Conduct Business," AT&T Technology, vol. 6, No. 4, 1991 (A21713611).
- Gawronski, Jane Donnelly, et al., "Audio Response System to Practice Mental Computation Skills," Proceedings of the Digital Equipment Computer Users Society, vol. 1, No. 2, Fall 1974, pp. 633-636 (A21725979).
- Gawrys, G. W., "ISDN: Integrated Network/Premises Solutions for Customer Needs," IEEE, 1986, pp. 1.1.1-1.1.5 (A21725555).
- Gaylord, D. M., "Better Health for Hospitals with DIMENSION 2000 PBX," Bell Laboratories Record, Jul.-Aug. 1981, pp. 170-173 (A21724371).
- Gerald, Jeanette A., "A Voice Response System for General Aviation Pilots," Article Source Unknown (A21708877).
- Gibson, Stanley, "Audix Upgrades Include Messaging, Billing, Management," Computerworld, Dec. 15, 1986, p. 29 (A21707568).
- Gibson, Stanley, "Octel Links Voice Mail System to Rolm PBX," Computerworld, Dec. 8, 1986, p. 42 (A21707564).
- Gillon, A. C., et al., "Voice Power Gives You Voice Messaging—And Then Some," AT&T Technology, vol. 4, No. 2, 1989 (A21712712) repeated (A21724818).
- Gitten, L. J. et al., "5ESS System Evolution," ISS Florence, Session 41 A, Paper 1, May 1984 (A21725543).
- Goecke, D., et al., "Software Engineering Approach Applied to the Complete Design and Production Process of Large Communication Systems Software," ISS '84 Florence, Session 13 C, Paper 1, May 1984.
- Goldstein, Mark L., "Send A Message. Now! New Digital Networks Can Give Companies a Competitive Edge," Industry Week, Jul. 21, 1986, p. 43 (A21706347).
- "Gotcha!," Edited by John A. Conway, Forbes, Mar. 10, 1986, p. 9 (A21708345).
- Gottlieb, Dan, "Does the Bell Toll for Voice/Data Independents?," Purchasing, Dec. 13, 1984, pp. 103-108 (A21724641).
- Grau, Jeff, "IBM Hints at Entering Voice Response Market in 1992," Article Source Unknown, Dec. 11, 1990 (A01346366).
- Greene, James E., et al., "Voice Response System Sticks to the Script and Saves Time, Money and Tempers for University Students and Administrators," Communication Age, Jan. 1986 (A21724080).
- Grumhaus, Audrey, "What's New In Telephone Service: Some Bad News for Nuisance Callers," The New York Times, Nov. 16, 1986 (A21725855) repeated (A21725857).
- Grunbaum, Rami, "Genesis Electronics Heeds the Voice Mail Calling," The Business Journal—Sacramento, vol. 2, No. 49, Mar. 10, 1986 (A21708341).
- Gunderson, Gary W., "Computer Consoles; Can Your Community Save Lives when Seconds Count?," Business Wire, Feb. 11, 1987 (A21707785).
- Hafner, Katherine, "Hello Voice Mail, Goodbye Message Slips," Business Week, Jun. 16, 1986 (A21708507).
- Hafner, Katherine, "System 85 Targets Leading-Edge Users: NBI," Computerworld, Sep. 5, 1983, p. 53 (A21724580).
- Hafner, Katherine, "Temporary Telephones," Network World, May 2, 1984 (A21708739).
- Hafner, Katherine, "The Venture Capital Adventure," Network World, Aug. 1, 1984 (A21708837).
- Hamel, Bob, "Voice Messaging; VMX Gives Firms Edge," Network World, Mar. 16, 1987 (A21707864).
- Hanson, Robert J., "The DSC-2000 VoiceServer System," Speech Technology, Aug.-Sep. 1984, pp. 55-65 (A21708818).
- Herits, E., et al., "A New Look for the White Pages," Bell Laboratories Record, Jun. 1980 (A21709547).
- Hardy, James O., et al., "Handling Coin Tolls Calls—Automatically," Bell Laboratories Record, Sep. 1980, pp. 256-262 (A21710422).
- Harrar, George, "Interview: Ed Landry; Making Office Connections at John Hancock," Computerworld, Apr. 14, 1986, p. 63 (A21708404).
- Hasui, Kouya, et al., "Man-Machine Interfaces in Office Communication Systems," IEEE Communications Magazine, vol. 24, No. 7, Jul. 1986, pp. 18-23 (A03701435).
- Coover, Edwin R., "Voice-Data Integration in the Office: A PBX Approach," IEEE Communications Magazine, vol. 24, No. 7, Jul. 1986, pp. 24-29 (A03701442).
- Haszto, E. D., et al., "ALLIANCE Teleconferencing Services Boost Business Efficiency," AT&T Technology, vol 3, No. 1, 1988 (A21724796).
- Heberle, W., "Accumulation of the Signals when Using the Pushbutton Telephone for Data Entry," Proceedings of the 5th International Symposium on Human Factors in Telecommunications, Sep. 1970 (A21725766).
- Heffron, W. G. et al., "Transaction Network Service," The Bell System Technical Journal, vol. 57, No. 10, Dec. 1978, pp. 3331-3347 (A21725986).
- Henricks, Mark, "DSC Makes Japanese Connection," Dallas-Fort Worth Business Journal, vol. 9, No. 30, Mar. 17, 1986 (A21708347).
- Hillhouse, Joseph, "PABX, the Hub: Keeping Communications on Track," Computer Decisions, vol. 16, Nov. 15, 1984, p. 84 (A21708974).
- Hindlin, Eric, "PBXs Becoming Practical Alternative to LANs," PC Week, vol. 4, Mar. 17, 1987, p. C16 (A21707870).
- Hird, E. V., "Party Line Cost Cutters," Telephone Engineer & Management, vol. 90, May 1, 1986, p. 51 (A21708442).
- Hollitz, John, "Giving Information without Human Intervention," The Business Journal—Sacramento, vol. 3, No. 26, Section 1, Sep. 29, 1986, p. 25 (A21706505).
- "Home Shopping Network Halts Talks," The Washington Post, Feb. 19, 1987 (A21707804).
- "The HORIZON Call Management System Tackles High Call Volume Demands," Telecommunications Product Review, Jan. 1983 (A21724553).
- Horton, L. A., et al., "AT&T Systems Link the University of Maryland," AT&T Technology, vol. 7, No. 2, 1992 (A21712897) repeated (A21725512).
- Horwitt, Elisabeth, "AT&T Enhancements Fill Gaps in System 75 Digital PBX," Computerworld, Jun. 16, 1986 (A21708505).
- Horwitt, Elisabeth, "Rolm to Unveil Low-End PBX: Digital System Bucks Feature-Rich Trend," Computerworld, Jun. 2, 1986, p. 8 (A21708489).
- Horwitt, Doran, "Boom For Voice Mail Systems," Info-World, Oct. 29, 1984, pp. 37-38 (A21708940).
- Hubbard, Thomas Leo, "Richardson: High-Tech Prosperity," Dallas Magazine, vol. 66, No. 2, Feb. 1987 (A21707741).

US 6,512,415 B1

Page 17

- Huber, K. M., et al., "Getting the Message with UMS," AT&T Technology, vol. 1, No. 1, 1986 (A21708123).
- Swann, L., "Universal Operations Systems—Integrated Building Blocks," AT&T Technology, vol. 1, No. 1, 1986 (A21708141).
- Hunter, John J., "Telephone Tag Alternative: Voice Messaging Unshackles Users from Traditional Telephone Limitations," Network World, Jul. 13, 1987 (A21714278).
- Hutchins, Dexter, "The Legal Battles Over Voice Messaging," Fortune, Oct. 28, 1985 p. 104 (A21708066).
- "IBM CallPath DirectTalk," Brochure, Date Unknown (A01346360).
- "IBM Gives Voice to PS/2, RS/5000 Platforms," Voice Processing Newsletter, vol. 10, No. 22, Aug. 1, 1991 (A01346371).
- "IBM Introduces 2 Phone Systems," The New York Times, Date Unknown (A01346365).
- "IBM, Inventor Reach Patent Agreement," The Washington Post, Aug. 30, 1985 (A21707976).
- "IBM Reaches Patent Agreement with Inventor," U.P.I., Aug. 29, 1985 (A21707974).
- "IBM—Rolm Eye CBX-SNA Link," Computerworld, Jan. 5, 1987 (A21707572).
- "IBM Says New Line of Big Computers is Faster than Promised," Wall Street Journal, Date Unknown (A01346364).
- "ICA Slates Huge Meeting, Exhibit; Includes Program and List of Exhibitors," Telephone Engineer & Management, vol. 88, Apr. 15, 1984, p. 96 (A21708657).
- IEEE Transactions on Consumer Electronics, vol. CE-25, No. 3, Jul. 1979 (A21725141).
- "Index to Theses," Edited by Geoffrey M. Paterson, et al., vol. XXVI, Part 1, 1977 (A21718028).
- "Industry Leaders License Katz Interactive Technology Patents," PR Newswire, Sep. 25, 1995 (A01331383).
- Press Release, Communications Daily, vol. 5, No. 126, Jun. 28, 1985, p. 5 (A21724661).
- "Inside an Internetworking Voice-Mail Processor," Data Communications, Oct. 1986, p. 158 (A21706523).
- "Integratec's Niche is Collecting on Delinquent Bank Card Accounts," American Banker, Aug. 10, 1988, p. 22 (A21724771).
- "Card Titan Sees Gold on Electronic Commerce," Financial Service Online, Jul. 1996, p. 8 (A21724775).
- "International Communications Network Service Installed by Commercial Cable," The Magazine of Bank Management, Jun. 1984, p. 126 (A21708770).
- "International Information Network Acquisition," PR Newswire, Nov. 7, 1985 (A21708093).
- "International Information Network Agreement," PR Newswire, Dec. 16, 1985 (A21708117).
- "International Information Network Announces Agreements," PR Newswire, Feb. 12, 1986 (A21708309).
- International Information Network Contract, Article Souce Unknown, Feb. 25, 1986 (A21708117).
- "International Information Network Earnings," PR Newswire, Dec. 9, 1985 (A21708110).
- "International Information Sets Financing Program," PR Newswire, Oct. 22, 1985 (A21708064).
- Press Release, Communications Daily, vol. 6, No. 41, Mar. 3, 1986, p. 11 (A21708337) repeated (A21706387).
- "Megaphone Intl Wins Calif. Lottery Contract," PR Newswire, Aug. 4, 1986 (A21706387).
- "Introducing Voice Quote," The Washington Post, Oct. 9, 1986 (A21707805).
- Press Release, Communications Daily, vol. 6, No. 189, Sep. 30, 1986, p. 7 (A21706510).
- Press Release, Communications Daily, vol. 6, No. 189, Sep. 30, 1986 (A21706511).
- Jenkins, Avery, "Iowa State Launching Campus Wide Network," PC Week, vol. 4, Feb. 3, 1987, p. C14 (A21707767).
- Jerman, Max, et al., "A CAI Program for the Home," Educational Technology, Dec. 1971, p. 49 (A21725984).
- Johnson, Eric, "Analysts Say that Voice—Message Will Take up \$1 Billion," Data Communications, Jan. 1984, p. 50 (A21708551).
- Johnson, J. W., et al., "Integrated Digital Services in the 5ESS™ System," ISS '84 Florence, May 1984, Session 14 A, Paper 3, pp. 1–8 (A21725525).
- Johnston, David, "'Pay Radio' Tunes in Charities, Turns off Some Consumer Groups," Los Angeles Times, Part 6, Aug. 24, 1986, p. 1 (A21706399).
- Excerpt from Journal of Information Processing Society of Japan (in Japanese), vol. 23, 1981 (A21724246).
- Kaplan, Jeff, "The Uncertain Future of Centrex," Network World, Mar. 14, 1984, p. 17 (A21708640).
- Karpinski, Richard, "IBM Offers Voice Processing Line," Telephony, Aug. 5, 1991 (A01346377).
- "Katz Scratch Fever," Telemedia News and Views, Date Unknown (A01331216).
- Katzel, Jeanine, "Selecting and Installing a Plant PBX System," Plant Engineering, vol. 37, Mar. 3, 1993 (A21713341).
- Kawakami, Tokuhiro, et al., "Speaker Independent Speech Recognition and Audio Response System and Facsimile Response System," NEC Technical Journal, vol. 39, No. 7, 1986, pp. 54–79 (A21708159).
- Kelleher, Joanne, "Users; Mastering DEC," Computerworld Extra!, Sep. 24, 1986, p. 61 (A21706475).
- Kemezis, Paul, "The Shared Tenant—Services Debacle and Lessons from it" Data Communications, Sep. 1986, p. 94 (A21706444).
- Koike, H., et al., "An Office—Use Voice Storage System with Elaborate User's Operativity," Proceedings of the Tenth International Symposium on Human Factors in Telecommunications, Jun. 1983, pp. 197–203 (A21725793).
- Koike, Tsunehiko, et al., "Parcor-Type Audio Response Unit (in Japanese)," Article Source Unknown (A21724841).
- "Kokusai Voicemail to Start International Voicemail Service," COMLINE Daily News Telecommunications, Mar. 10, 1987 (A21707861).
- Kolodziej, Stan, "Where is the Electronic Messaging Explosion?," Computer World, Oct. 16, 1985, p. 21 (A21708056).
- Korzeniowski, Paul, "Voice Messaging; ETS Demise Hits Rolm, Octel Users," Network World, Aug. 4, 1986, p. 1 (A21706390).
- Kylin, J. C. et al., "Benefits of Integrating Data Bases into the SPC Network," ICC '79 Conference Record, vol. 1, Jun. 1979 (A21726001).
- Lawson, Michael, "AT&T Leaves 'Super-PBX' money on the table for Northern Telecom," Data Communications, Sep. 1987 (A21712210).
- Lazarus, George, "Pepsi Also Won the Super Bowl," Chicago Tribune, Jan. 30, 1987 (A21707647).
- Lee, Linda et al., "Meridian SL Information Services," Telesis, 1985, pp. 13–19.

US 6,512,415 B1

Page 18

- Leibowitz, Ed, "The Wonder Years: Intriguing ACD Trends for the 1990s," *Teleconnect*, vol. 8, No. 4, Apr. 1990, p. 84 (A21712064).
- Levin, David, "Private Branch Exchanges: The Best Time to Shop Might Be Right Now," *Data Communications*, Aug. 1987, p. 100 (A21714315).
- Lineback, J. Robert, "VMX Girds for a Fight in Market it Pioneered," *Electronics*, May 12, 1986 pp. 55-56 (A21708453).
- Lukeson, David R., "CLASS: The Smart Local Telephone Network," *Proceedings of the International Congress on Technology and Technology Exchange*, Oct. 1984, pp. 100-103 (A21725864).
- "The LUMA Visual Telephone," *Telecommunications Product Review*, vol. 13, No. 7, Jul. 1986 (A21706313).
- Lyman, Guy C., III, "Voice Messaging Comes of Age," *Speech Technology*, Aug.-Sep. 1984, pp. 45-49 (A21724634).
- Mankin, Eric, "Playing TV Telephone: New System Opens Door for Audience Participation," *Electronic Media*, Apr. 24, 1989 (A01331389).
- Marino, P. J., et al., "AT&T Communications ISDN Plans," *IEEE*, 1985, pp. 247-251 (A2173894) repeated (A21725560).
- "Marubeni to Install Voice-Box Mail System," *Japan Economic Journal*, Mar. 13, 1984, p. 9 (A21708639).
- Mason, G. C. W., "Use of Recorded Announcements for Guidance of Users of Telecommunications Networks," *Proceedings of the Eighth International Symposium on Human Factors in Telecommunications*, Sep. 1977, pp. 257-262 (A21725784).
- Massey, David K., "Voicetek Hears Sweet Success with Market Strategy," *Boston Business Journal*, vol. 7, No. 21, Section 1, Jul. 20, 1987, p. 6 (A21714290).
- "The Master of Trivia," *The Sporting News*, Aug. 19, 1985 (A21706671).
- Matheson, David, "ISDN: The Technology has Discovered its Purpose," *Telemarketing*, May 1990 (A40002414).
- Maxemchuk, N. F., "An Experimental Speech Storage and Editing Facility," *The Bell System Technical Journal*, vol. 59, No. 8, Oct. 1980 (A21724241).
- Mearns, Allison B., et al., "Calling Card-Don't Tell It-Dial It," *Bell Laboratories Record*, May-Jun. 1982, pp. 117-119 (A21709811) repeated (A21709808).
- Michaelson, Marlene, "Business, Services Use 'Dial A' Formats," *Contra Costa Times*, Sep. 8, 1986 (A21707858).
- Mier, Edwin E., "A Big Bonanza in Little Switches," *Data Communications*, Jun. 1984, p. 68 (A21708764).
- Miles, J. B., "AT&T System Upstages its FTS Rivals at Shows; The FTS 2000 Telecommunications Contract," *Government Computer News*, vol. 6, No. 4, Feb. 27, 1987, p. 1 (A21707808).
- Miles, J. B., "Bypass Starts to Soar; More Businesses are Avoiding the Public Phone Network as New Technologies Surface and Telecomm Costs Rise," *Computer Decisions*, vol. 17, Nov. 5, 1985, p. 82 (A21708087).
- Miles, J. B., "Network Control Under Control; Corporations Seeking Unified Network Management Systems May Find Hope in Several New Offerings," *Computer Decisions*, vol. 18, Jul. 15, 1986, p. 70 (A21706340).
- Excerpt from *Modern Office Technology*, Jul. 1986 (A21706315).
- Moore, Steve, "Project Management; Anatomy of a Cutover, Part 1" *Network World*, Aug. 25, 1986, p. 26 (A21706408).
- Moore, Steve, "Project Management; Anatomy of a Cutover, Part 2" *Network World*, Sep. 1, 1986, p. 35 (A21706447). Press Release, *Data Communications*, Aug. 1984, p. 58 (A21708825).
- "MTV-Networks Signs with American Express Affiliate FDR Interactive Technologies," *Business Wire*, Mar. 28, 1989 (A01331393).
- "NAB in the 'Big D,'" *Broadcasting*, vol. 112, Mar. 30, 1987, p. 83 (A21707892).
- "National Railways' Seat Reservation System by Touch Tone Telephone," *Electrical Communication Facilities*, vol. 38, No. 339, 1975 (A21724984).
- "Newly Formed company Assigned Several Interactive Technology Patents Following the Settlement of Multimillion Dollar Patent Lawsuit," *Business Wire*, Oct. 17, 1994 (A01331386).
- "New AT&T Device Made in Columbus," *Columbus Citizen Journal*, Sep. 7, 1985 (A01354693).
- "New Products Telecommunications," *Sound & Communications*, vol. 28, No. 12, Apr. 1983, pp. 84-85 (A21713354).
- "New Systems Stem Losses from Credit Card Debt; Technology Streamlines Phone Contacts," *American Banker*, Aug. 10, 1988 (A21724777).
- "New Voice Processing Products Mean Improved Customer Service," Article Source Unknown, (A01346357).
- Newton, Harry, "AT&T Information Systems One Year Later," *Office Administration and Automation*, vol. 45, Jan. 1984, p. 37 (A21708557).
- Newton, Harry, "Dumb Smart Switches," *Teleconnect*, May 1991, pp. 14-18.
- Newton, Harry, et al., "Send Us Your Pre-1989 Brochures," *Computer Telephony*, Oct. 1996, pp. 16-26 (A01331210).
- Nishikado, Iwamasa, et al., "Voice Storage System for Centralized Extension System," *Review of the Electrical Communication Laboratories*, vol. 32, No. 6, 1984, pp. 1010-1018 (A21725924).
- Press Release, *The American Banker*, Oct. 20, 1986, p. 13 (A21706658).
- "Northern-Telecom-2; (NT) Northern Telecom Announces Software Feature Package," *Business Wire*, Feb. 18, 1997 (A21707802).
- "No. Telecom Upgrades Digital PBX," *Electronic News*, vol. 30, Apr. 30, 1984, p. 63 (A21708708).
- Nowogrocki, Jim, "City, County Spend About \$1 Million on 911," *St. Louis Business Journal*, vol. 6, No. 43, Section 3, Aug. 4, 1986, p. 1C (A21706393).
- "Office Automation Advances 'White Collar' Productivity," *Dun's Business Month*, vol. 126, Mar. 1986, p. 59 (A21708336).
- The Official Proceedings of Speech Tech '85, *Media Dimensions*, Inc., Apr. 1985, Cover and General Information Pages.
- Excerpt in Japanese, Article Reference Unknown (A21724849).
- Press Release, PR Newswire, May 9, 1986 (A21708451).
- Paznik, Megan Jill, "Voice Mail: Pitfalls and Promises," *Administrative Management*, vol. 48, Mar. 1987, p. 16 (A21707849).
- "The PBX Marketplace; Private Branch Exchanges," *Administrative Management*, vol. 47, Jan. 1986, p. 45 (A21708194).
- "Peek at Future of 'General Hospital'" *Times-Picayune*, Date Unknown (A21708536).

US 6,512,415 B1

Page 19

- Pelline, Jeff, "AT&T System Links Voice to Computer," San Francisco Chronicle, Sep. 10, 1985 (A01354691). "Perception Technology; (PCEP) Perception Technology Announces ANI, DID Enhancements," Business Wire, Feb. 27, 1987 (A21707811).
- Petit J. C., et al., "GALAXIE: Toward Adaptive Distributed Control Systems," ISS '84 Florence, May 1984, Session 41 A, Paper 3.
- Petrosky, Mary, "Interactive Speech System From AT&T's Business Unit," Infoworld, vol. 7, Issue 38, Sep. 23, 1986 (A21708029).
- Pfister, George M., "The PBX: What Matters, What Doesn't," Datamation, vol. 30, Aug. 1, 1984, p. 121 (A21708831).
- Plakias, Mark, "The Katz that Ate the Canary," Telemedia News and Views, vol. 2, No. 11, Nov. 1994 (A01331037).
- Pollack, Andrew, "Audiotex: Data By Telephone," The New York Times, Jan. 5, 1986 (A21725850).
- Portantiere, Nick, "AT&T Introduces System 25 Digital PBX," Electronic News Jul. 7, 1986, p. 34 (A21706324). Power of Attorney for USPA 5,109,404 Inventor Ronald A. Katz.
- Prell, E. M., et al., "The Changing Role of the Operator," International Switching Symposium, May 1979, pp. 697-703 (A21725933).
- Prince, Terry, et al., "A Telephone for the 'Checkless' Society," Bell Laboratories Record, Sep. 1972, pp. 249-253 (A21725647).
- "Profit from Impulse Pay-Per-View," Advertisement for Science Dynamics Corporation, Jul. 14, 1986 (A21706337). "Prudential Insurance Mortgage by Phone Program," PR Newswire, Feb. 19, 1986 (A21708310).
- Pulford, Jack, "Aurora System is Built to Grow," Telephone Engineer & Management, vol. 88, Aug. 1, 1984, p. 78 (A21708841).
- Putnam, Jane, "Winners," Contra Costa Sun, Aug. 14, 1985 (A21706705).
- "Putting an End to Telephone Tag," ABA Banking Journal, Feb. 1987, (A21707747).
- Raack, G. A., et al., "Customer Control of Network Features," ISS '84 Florence, May 1984, Session 14 A, Paper 2 (A21725520) repeated (A21725717).
- Raimondi, Donna, "AT&T Debuts Primary Rate for System 85," Computerworld, Feb. 23, 1987, p. 41 (A21707806).
- Rappaport, David M., "Voice Mail: Key Tool or Costly Toy," Data Communications, Oct. 1986, p. 153 (A21706526).
- "Redwood by Rolm," Telecommunications Product Review, vol. 13, No. 6, Jun. 1986 (A21708487).
- Rees, Norm, "Flexible Voice Response Software Speeds Development for Resellers," Speech Technology, Mar.-Apr. 1988, pp. 46-49.
- Results of Lexis Search Request for "Call Interactive," Date of search Aug. 5, 1996 (A01331399).
- Rice, Valerie, "AT&T Enters Speech-Processing Business, Names First Customers," Investor's Daily, Sep. 10, 1985 (A01354684).
- Riederer, S. A., "Conversant VIS Means Business," AT&T Technology, vol. 5, No. 4 (A21711986).
- Rangnekar, S., et al., "AT&T Voice Mail Service," AT&T Technology, vol. 5, No. 4 (A21711992).
- "Ring System; Provides District of Columbia with Automatic Number and Location Identification to Aid in Emergency Services Response," Business Wire, Aug. 7, 1986 (A21706396).
- Press Release, PR Newswire, Mar. 3, 1986 (A21708338). Rippetau, Jane, "Smart'Way to Get Message Across," Financial Times, Jun. 12, 1986 (A21708502).
- Rogers, Thomas, et al., "Scouting-A Worthwhile Trivial Pursuit," The New York Times, Aug. 9, 1985 (A21707968). "Rolm-Corp; Appoints Harvey and Zalisk as Vice President," Business Wire, May 21, 1986 (A21708472).
- "Rolm-corp; Introduces Redwood for Branch Offices and Small Businesses," Jun. 2, 1986 (A21708491).
- "Rolm; Links PhoneMail to IBM VM Host," Business Wire, May 5, 1986 (A21708447).
- "Rolm; Rolm Announces PhoneMail Network," Business Wire, Feb. 9, 1987 (A21707775).
- "Rolm; Rolm Awarded Major contract by Columbia University," Business Wire, Mar. 2, 1987 (A21707855).
- "Rolm; Rolm CBX II 9000AE Offers Abundant System Power for Applications Growth," Business Wire, Feb. 3, 1987 (A21707765).
- "Rolm; 15-Node Rolm System to be Installed at University of Rochester," Business Wire, Nov. 11, 1985 (A21708096).
- Roman, David R., "Building Up Your Personal Computer; Part II: Data-Input Devices," Computer Decisions, vol. 16, Mar. 1984, p. 110 (A21708630).
- Rosenbaum, Art, "This 'Maniac'Spreads His Loot Around," San Francisco Chronicle, Jul. 24, 1986 (A21706875).
- Rosinski, R. R., "Uses of AT&T Speech Processing Technology," AT&T Technology, vol. 5, No. 4, Date Unknown, pp. 4-5 (A21723940).
- Ruhl, H. W., et al., "Sprein-A Voice I/O Mail Order System with Telephone Access," Article Source Unknown.
- Salter, Stephanie, "When the 'Say Hey Kid'Met the 'Say How'Bunch," San Francisco Examiner, Date Unknown (A21706704).
- Sanger, David E., "A Driving Force Leaves Rolm," The New York Times, Jan. 15, 1986 (A21708200).
- Press Release, PR Newswire, Sep. 17, 1985 (A21708022).
- Schindler, Paul E., Jr., "AT&T Talking up Conversant 1 Unit," Information Week, Sep. 16, 1985 (A21723912).
- Schinke, David, "Speaker Independent Recognition Applied to Telephone Access Information Systems," Speech Tech '86, 1986 (A21718178).
- Schulman, Henry, "AT&T Device: Talk to Computer By Phone," The Oakland Tribune, Sep. 10, 1985 (A0354685).
- Schumaker, Robert M., Jr., "Phone-Based Interfaces: Research and Guidelines," Proceedings of the Human Factors Society 36th Annual Meeting, 1992, pp. 1051-1055.
- Schwartz, Jeffrey, "IBM Enhances Voice Processing," Article Source Unknown (A01346375).
- Schwartz, P., et al., "JISTEL 500-Time Division Exchange Including voice and Data with Voice Messaging," ISS '84 Florence, May 1984, Session 21 A, Paper 6, pp. 1-4.
- Scully, Sharon, "Product News; Saturn PBX Revamped," Network World, May 19, 1986, p. 4 (A21708470).
- Seaman, John, "Voice Mail: Is Anybody Listening?," Computer Decisions, vol. 16, May 1984, p. 174 (A21708731).
- "Select List of Telecommunications Providers," The Magazine of Bank Management, Aug. 1986, p. 32 (A21706373).
- Semilof, Margie, "High-End Voice/Data PBXs: Voicing Doubts about Data," Network World, Mar. 31, 1986, p. 65 (A21708354).
- "Senate Panel Meets Today; C&P Objects to House Decision Awarding Telephone Contract to AT&T-IS," Communications Daily, vol. 5, No. 238, Dec. 10, 1985, p. 4 (A21708112).

US 6,512,415 B1

Page 20

- Session No. 13—Contemporary Developments in Addressability and Pay-Per-View, Pay-Per-View Conference, Apr. 28, 1985, p. 21 (A21707196).
- Sharma, Ranjana, "PBX Users Benefit from Vitality of ACD Market," Network World, Oct. 17, 1988 (A21712686).
- Shaw, Peter, "The Need for BT's Managed Information Services," British Telecommunications Engineering, vol. 11, Apr. 1992, pp. 2-6.
- Sherpherd, John, et al., "Managed Recorded Information Services—An Overview," British Telecommunications Engineering, vol. 11, Apr. 1992, pp. 7-13.
- Shimizu, Hiroshi "Advanced Credit Call Service," Japan Telecommunications Review, Oct. 1986, pp. 247-250.
- Press Release, PR Newswire, Dec. 5, 1985 (A21708108).
- Siragusa, Gail, "Voice Mail Takes Off: Send and Receive Messages by Phone," Administrative Management, vol. 47, Apr. 1986, p. 43 (A21708393).
- "Small Company Initial Public Offerings: Dec. 1983," Goldhirsch Group, Inc., Mar. 1984, p. 138 (A21708624).
- Smith, Tom, "Production Use of ISDN Lives up to Expectations," Network World, Feb. 26, 1990 (A21712004).
- Snow, Stephen A., "Consumers Show Strong Preference for Automated Telephone Call Processing," Business Wire, Oct. 19, 1988 (A21724781).
- "AT&T to Offer New Service," Reuter Newswire, Nov. 21, 1988 (A21724788).
- "Soap Opera Updates Now Available in Area," Contra Costa Times/TV, May 28, 1984, p. 4 (A21708748).
- "Something for Everyone at NAB's Equipment Exhibition," Broadcasting, vol. 112, Mar. 23, 1987, p. 63 (A21707873).
- Song, D, et al., "System 12 Line and Trunk Testing," ISS Florence, May 1984, Session 32 A, Paper 5, p. 1.
- "Special Information Tones Provide Computer with Vital Call Data," Bell Laboratories Record, Nov. 1981 (A21710768).
- Staehler, R. E., "Toward a More Automated Network—TSPS Enhancements Lead the Way," Telephony, Feb. 8, 1982, pp. 45-48 (A21725941).
- "The Stamp of Approval for Voicemail," Article Source Unknown, (A21707760).
- Stern, Aimee, "Cable Operators Fight Back; Pay-Per-View TV," Dun's Business Month, vol. 129, Feb. 1987 (A21707748).
- Stewart, Alan, "Signaling Changes for Interconnects; NATA 86 Trade Show," Telephone Engineer and Management, vol. 90, Dec. 15, 1986, p. 72 (A21707569).
- Stix, Gary, "Many Bands=Light Work," Computer Decisions, vol. 17, Sep. 10, 1985, p. 92 (A21708015).
- Press Release, Communications Daily, vol. 5, No. 148, Jul. 31, 1985, p. 7 (A21708033) repeated (A21724666).
- "International Information Network Earnings," PR Newswire, Sep. 30, 1985 (A21708033) repeated (A21724666).
- "International Information Sets Financing Program," PR Newswire, Oct. 22, 1985 (A21708034) repeated (A21724667).
- Stoffels, Bob, "REA Takes its Show on the road: Engineering and Management Seminars," Telephone Engineer & Management, vol. 88, May 15, 1984, p. 129 (A21708746).
- "Strike Three," S. F. Progress, Aug. 7, 1985 (A21706708).
- Strom, David, "Telephone or MIS Managers: Who Flips the PBX Switch; Management and Use of New communications Technology; Connectivity—Focus on LANs," PC Week, vol. 4, Feb. 17, 1987, p. C1 (A21707798).
- Sullivan, Linda, "Ameritech Services Signs Leading National Information Provider as a Master Dealer," Business Wire, Sep. 25, 1989 (A21724794).
- Susca, Paul, "Telemarketing: reach Out and Sell Someone," Network World, May 4, 1987 (A21714122).
- Swan, Gary E., "Gift of Kids Wasted if Ballplayers Strike," San Francisco Chronicle, Date Unknown (A21706673).
- "System 85 Voice Messaging Due in '85," Data Communications, Dec. 1984, p. 204 (A21709005).
- Tagg, Ed, "Automating Operator-Assisted Calls Using Voice Recognition," Speech Technology, Mar.-Apr. 1988, pp. 22-25.
- Takahashi, Y., "Technique to Use Chinese Letters for the on-Line System in Marketing Business," Packaging Technology, vol 19, No. 11, 1981 (A21724264).
- Talmadge, Candace, "MetroCal Dumps Richards for K-C," Adweek, Jan. 5, 1987 (A21707728).
- "Tech Deals," Phillips Business Information, vol. 7, No. 120, Jun. 25, 1996 (A01331382).
- Telecommunication Technology, vol 4, No. 4, Apr. 1986, p. 68 (A21724070).
- "Teleguide'Network Gives Tourists the Answers," ComputerData, Apr. 1983 (A21724569).
- "Telephone Service Offers the Latest News on the Soaps," Augusta, GA Chronicle-Herald, Jul. 28, 1984 (A21724626).
- Telephony, Sep. 29, 1980 (A217116447).
- "Test Your Baseball I. Q. and Win Four Tickets to All-Star Workout Day," Contra Costa Times, Date Unknown (A21706787).
- Tetschner, Walt, "PC-Based Voice Processing Software Tools," Speech Technology, Mar.-Apr. 1988, pp. 42-45.
- Tetschner, Walt, "The Voicetek VTK 90 Voice Computer," Speech Technology, Mar.-Apr. 1987, pp. 102-106.
- "They've Got Your Number in AT&T's first Primary-Rate Test," Data Communications, Feb. 1988, p. 15 (A21712494).
- "Toshiba Telecom Introduces Universal Instrumentation for Entire Line of Key and PBX Systems," Telecommunications Product Review, vol. 11, No. 2, Feb. 1984 (A21708573).
- "Tracking the Trucks," Network World, Sep. 5, 1984, p. 55 (A21708897).
- Excerpt from Transportation Technology (in Japanese), vol. 30, No. 7, 1975 (A21725045).
- "Trivia Promo Chips Away for Frito-Lay," Advertising Age, Date Unknown (A21707650).
- "Trivial Tickets," The fort Wayne Journal-Gazette, Aug. 11, 1985 (A21706713).
- "Two Firms Introduce FMS Products," Energy User News, vol. 9, Aug. 6, 1984, p. 12 (A21708848).
- Tyson, David O., "Voice Mail Technology Streamlines Bank Telephone Messaging Services," The American Banker, Oct. 15, 1986, p. 13 (A21706655).
- Upton, Molly, "No Clear Winner in War of Mails," Computerworld, May 19, 1986, p. 60 (A21708459).
- Vanandel, M. A., "While You're Away, AUDIX Will Answer," AT&T Technology, vol. 3, No. 3, 1988 (A21724808).
- "Vendor Support Eases GOP Costs," Computerworld, Aug. 27, 1984 (A21708865).
- "View from Silicon Valley: Silicon Valley Companies Battle for Advantage, Compatibility," Communications Daily, vol. 4, No. 90, May 8, 1984, p. 1 (A21708743).

US 6,512,415 B1

Page 21

- Virzi, Robert A., "Skip and Scan Telephone Menus: User Performance as a Function of Experience," Proceedings of the Human Factors Society 36th Annual Meeting—1992, p. 211–215.
- Vizcarondo, John, et al., "HOBIS: New Designs on Hotel Billing," Bell Laboratories Record, Jan. 1980 (A21709392).
- "VMX Announces InfoLink: New capability in Voice Messaging Arena," Business Wire, Jun. 16, 1987 (A21714159).
- "VMX/Honeywell; (VMXI) (HON) Take Voice Messaging 'Down under' After Signing Distribution/OEM Agreement for Australia and Pacific Basin," Business Wire, Sep. 3, 1986 (A21724699) repeated (A21706451).
- "VMX, Inc. Adds Internal Revenue Service to Voice Message (SM) Users," Southwest Newswire, Feb. 8, 1984 (A21708587).
- "VMX, Inc. Announces Another Good Quarter," Southwest Newswire, Aug. 1, 1984 (A21708846).
- "VMX, Inc. Announces First Quarter Results," Southwest Newswire, Oct. 18, 1985 (A21708063).
- "VMX, Inc. Announces Landmark Approval of first Voice Message System in Japan," Southwest Newswire, Jun. 1, 1984 (A21708776).
- "VMX; (VMXI) AT&T Tops List of Seven License Agreements Granted in Third Quarter," Business Wire, Sep. 9, 1986 (A21706457).
- "VMX-Inc; (VMXI) Hosts First International Networking Seminar," Business Wire, Jul. 18, 1986 (A21706345).
- "VMX, Inc. Provides First Voice Message (SM) Systems to Three Bell Operating Companies," Southwest Newswire, Dec. 11, 1984 (A21709007).
- "VMX, Inc. Releases Audited Fiscal 1984 Financials—It was a Very Good Year," Southwest Newswire, Aug. 7, 1984 (A21708852).
- "VMX; (VMXI) Voice Messaging Leader VMX, Inc. Launches New Generation Technology with VMX(R) 5000 Series," Business Wire, Oct. 7, 1986 (A21706650).
- "VMX; (VMXI) Voice Messaging Patent-Holder VMX Inc. Moves into France after Signing Distribution Agreement with Jeumont-Schneider," Business Wire, Sep. 15, 1986 (A2170659).
- "VMX; (VMXI) VMX 5000 Series Voice Messaging System Scores High Sales During First Quarter" Business Wire, March 10, 1987 (A21707862).
- Press Release, Communications Daily, vol. 4, No. 209, Oct. 26, 1984, p. 6 (21708939).
- Press Release, Computerworld, Oct. 7, 1985, p. 68 (A21708055).
- Press Release, PR Newswire, Jan. 18, 1984 (A21708570).
- Press Release, PR Newswire, Apr. 10, 1984 (A21708655).
- Press Release, PR Newswire, Oct. 16, 1984 (A21708935).
- Press Release, PR Newswire, Jan. 24, 1986 (A21708207).
- Voice Mail Brochure, Radio-Suisse Ltd., Date Unknown (W70172).
- "Voice Messaging Capability from VMX," The Magazine of Bank Management, Oct. 1985, p. 86 (A21708037).
- Voice Processing International Conference Program, Jul. 1986 (A21723351).
- Voice Processing—The New revolution, Proceedings of the International Conference, Jul. 1986 (A21722980).
- "Voice System Tunes up Automaker's Communications," Computerworld, Nov. 12, 1984, p. 35 (A21708972).
- Press Release, Communications Daily, vol. 4, No. 110, Jun. 6, 1984, p. 9 (A21708778).
- "Votrax Announces Centrum 9000, Model 5," Source Unknown, Oct. 16, 1987 (A21724763).
- Waite, Andrew J. "Applying IVR Systems", Inbound/Outbound, Sep. 1988, pp. 30–39 (A21725733).
- Walker, Murt, "CCS7 Offers New Paths to Revenue Generating Services," AT&T Technology, vol. 6, No. 2, 1991, pp. 8–19 (A21713600).
- Wallace, Bob, "All Voice Systems Are Not Alike," Network World, Sep. 14, 1987 (A21712240).
- Wallace, Bob, "Comnet '87; AT&T Announces ISDN Interface for System 85," Feb. 16, 1987 (A21707796).
- Walters, R.E., et al., "Voice Processing Systems in British Telecom," British Telecommunications Engineering, vol. 9, Jul. 1990, pp. 88–97.
- Warner, Edward, "Bank's Speech Synthesizers Greet Financiers' Calls with Daily Balance," Computerworld, Oct. 22, 1984, p. 6 (A21708937).
- Watt, Peggy, "Local Phone Companies Eyeing Market for Voice Mail Services," Computerworld, Mar. 24, 1986, p. 23 (A21708350).
- Watt, Peggy, "Republicans Ready for High-Tech: GOP Convention will Feature Voice Message System," Info-World, Aug. 27, 1984 (A21708862).
- Weinstein, Bob, "Stock Exchange Gets News by Phone," Inbound/Outbound, Oct. 1988, pp. 39–46 (A21725744).
- Weinstein, Bob, "Stopping the Broker's Bottleneck," Inbound/Outbound, Nov. 1988, pp. 22–23 (A21725753).
- West Interactive Settles with FDR: Patnet Suit Settlement Could Have Major Industry Impact, Enterprise Communications, Nov. 1994 (A01331040).
- Whalen, Bernie, "Marketers Expand Applications of Dial-It 900 Technology," Marketing News, Nov. 26, 1982 (A21725861).
- "What's An 'Automated' Attendant," Inbound/Outbound, Jul. 1989, pp. 40–42 (A21724789).
- "Whether to Answer the Phone," The Washington Post, Dec. 7, 1986 (A21707563).
- Whitten, W. B., "Advanced Interfaces Speed Delivery of Services," AT&T Technologies, vol. 2, No. 3, (A21707593).
- "Who Switches Data Along with Voice? PBX Users, Increasingly," Data Communications, Feb. 1987, p. 77, (A21707751).
- Wilpon, Jay G., et al., "Speech Recognition: From the Laboratory to the Real World," AT&T Technical Journal, Sep.–Oct. 1990, pp. 14–24 (A21723481).
- Wise, Deborah C. "This computer Even Deciphers Noo Yawk Talk," Business Week, Sep. 23, 1985, pp. 40–42 (A01354687).
- Witten, Ian H., "Making Computers Talk: An Introduction to Speech Synthesis," Prentice-Hall, 1986 (A21708148).
- Witten, Ian H. "Principles of Computer Speech," Academic Press, 1982 (A21709597).
- Wolfe, R. M., et al., "telecommunications Data Base Application with the 3B™20 Processor," ISS '84 Florence, May 1984, Session 22 A, Paper 2 (A21725518).
- Wollenberg, Skip, "American Express Affiliate Plans Interactive Phone Service," the Associated Press, Jan. 19, 1989 (A0131396).
- Wong, Stephanie Lam, "Just a Phone Call Away," San Francisco Chronicle, Date Unknown (A21707649).
- Wood, Lamont, "Stretching the Workday; Corporate Users Find that Voice Mail Saves them Time in Transmitting Important Messages," computer Decisions, vol. 18, Dec. 2, 1986, p. 44 (A21707561).

US 6,512,415 B1Page 22

- Wood, Lamont, "Will New Alliances Forge better Links?Private Branch Exchange Vendors Merge with Computer Firms," Computer Decisions, vol. 18, Jul. 29, 1986, p.40 (A21706353).
- Worrall, D. P., "New Custom Calling Services," The Bell System Technical Journal, vol. 61, No. 5, May-Jun. 1982 pp. 821-839 (A21725897).
- "Worthwhile Trivia," The New York Times, Date Unknown (A21706711).
- "Yes! Songs For You," Advertisement, Source Unknown (W73764).
- Youngs, E. A., "The Changing Role of Human Factors Work Supporting New Telecommunications Products and Service," Proceedings of the Tenth International Symposium on Human Factors in Telecommunications, Jun. 1983 (A21725809).
- Youngs, E. A., "Effects of Automating Operator Services on Customers and Operators," Proceedings of the Eighth International Symposium on Human Factors in Telecommunications, Sep. 1977, pp. 251-255 (A21725776).
- "Zenith; Centel Plans Zenith Phonevision Pay-Per-View Cable TV System," Business Wire, Dec. 5, 1985 (A21708105).
- Zeno, Charlie, "Trivia Buff's Special Party for 678 Kids," Contra Costa Times, Date Unknown (A21706788).
- Zuckerman, Steve, "Ogilvy & Mather/Dallas Looks for Partner to Go After Bigger Accounts," Dallas Business Courier, vol. 2, No. 21, Section 1, Sep. 8, 1986, p. 12 (A21706454).
- Complete Issue of Bell Labs News, vol. 21, No. 40, Oct. 5, 1981 (A21710762).
- Complete Issue of Bell Labs News, vol. 25, No. 36, Sep. 30, 1985 (A21724662).
- Complete Issue of Bell Labs News, vol. 26, No. 31, Aug. 18, 1986 (A21706398).
- Complete Issue of Bell Labs News, vol. 27, No. 33, Aug. 17, 1989 (A21710741).
- Bell of Pennsylvania Press Release, Mar. 13, 1984 (A21725876).
- Dorros, Irwin et al., "Reaching into the Future with Stored Program Control," Bell Laboratories Record, Dec. 1980, pp. 387-393 (A2170507).
- Complete Issue of Voice News, vol. 4, No. 9, Oct. 1984 (A21708913).
- Complete Issue of Voice News, vol. 6, No. 7, Jul./Aug. 1986 (A21706303).
- Complete Issue of Voice News, vol. 7, No. 2, Feb. 1987 (A21707730).
- Complete Issue of Voice News, vol. 7, No. 3, Mar. 1987 (A21707834).
- Complete Issue of Voice News, vol. 7, No. 5, May 1987 (A21714110).
- Complete Issue of Voice News, vol. 7, No. 10, Oct. 1987 (A21724749).
- "Network Communications Applications and Services," AT&T Communications Consultant Liaison Program, Issue 1, Jun. 1984.

* cited by examiner

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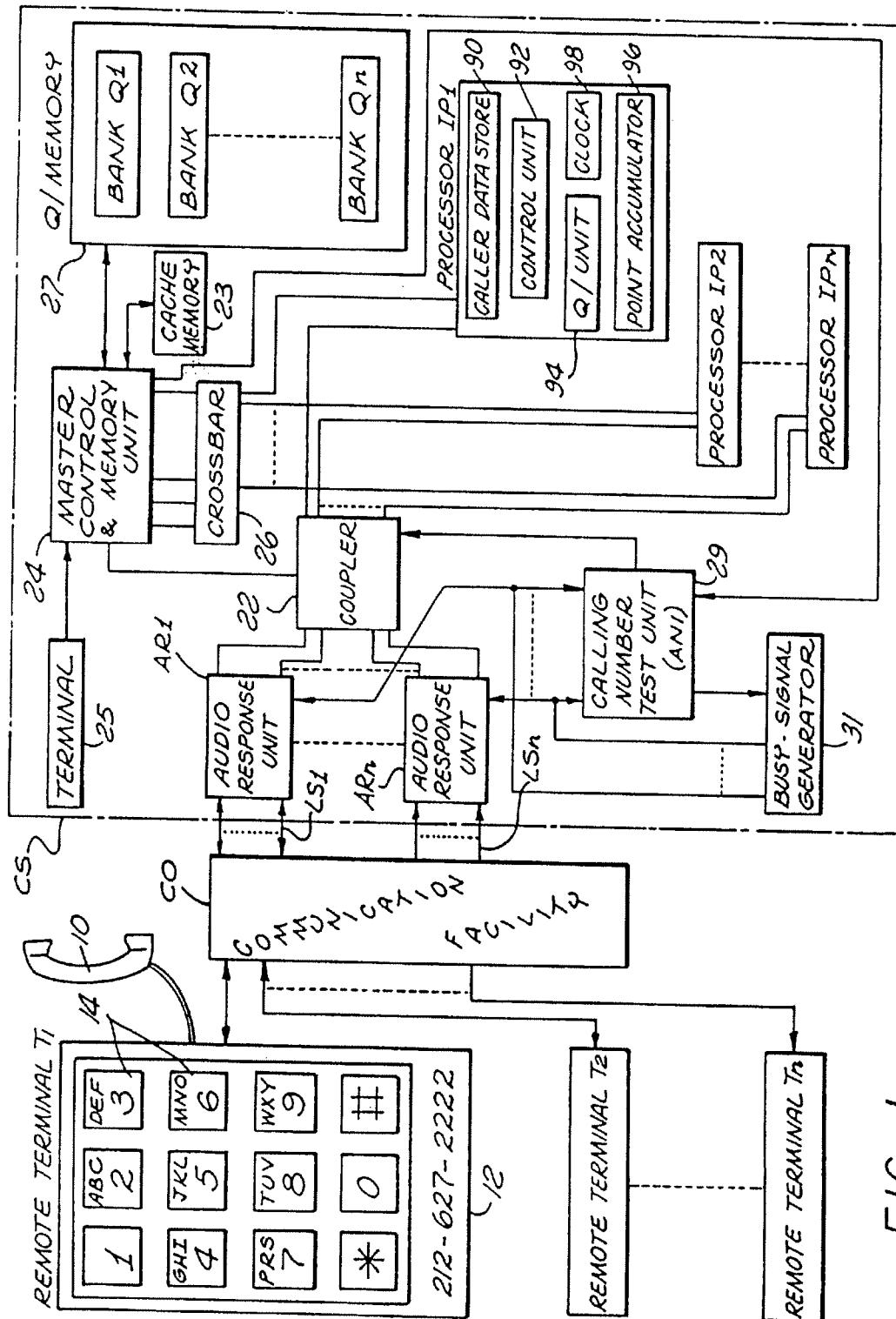


FIG. 1

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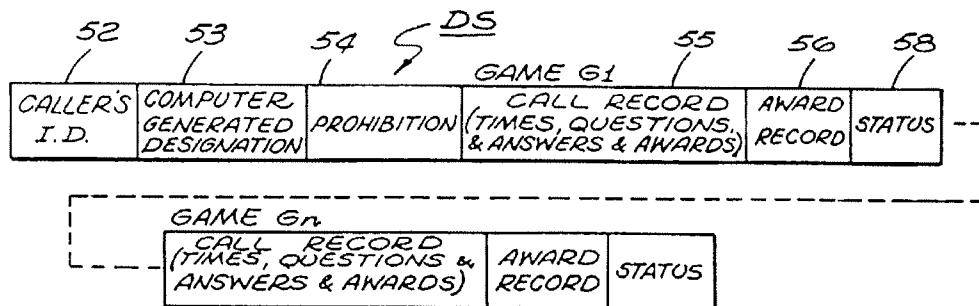
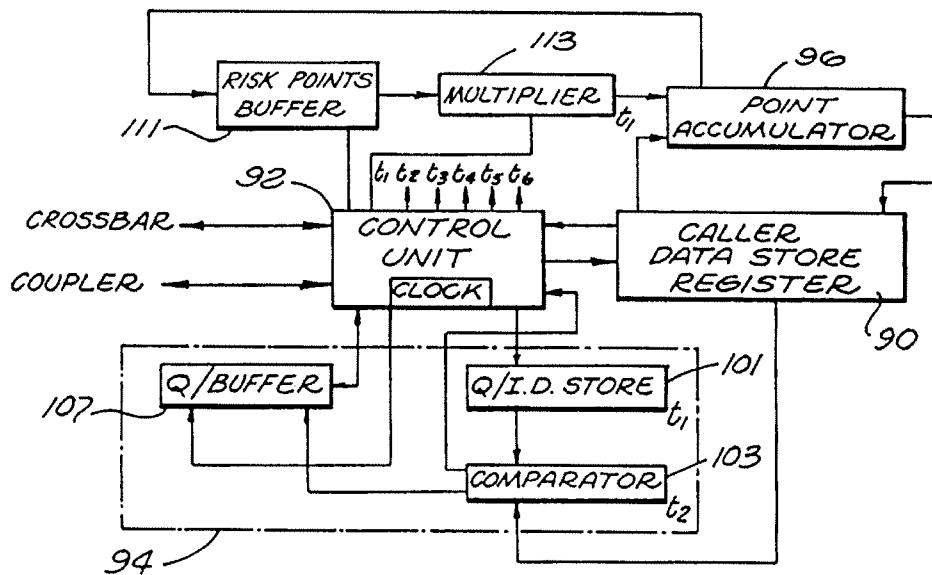


FIG. 2

FIG. 4



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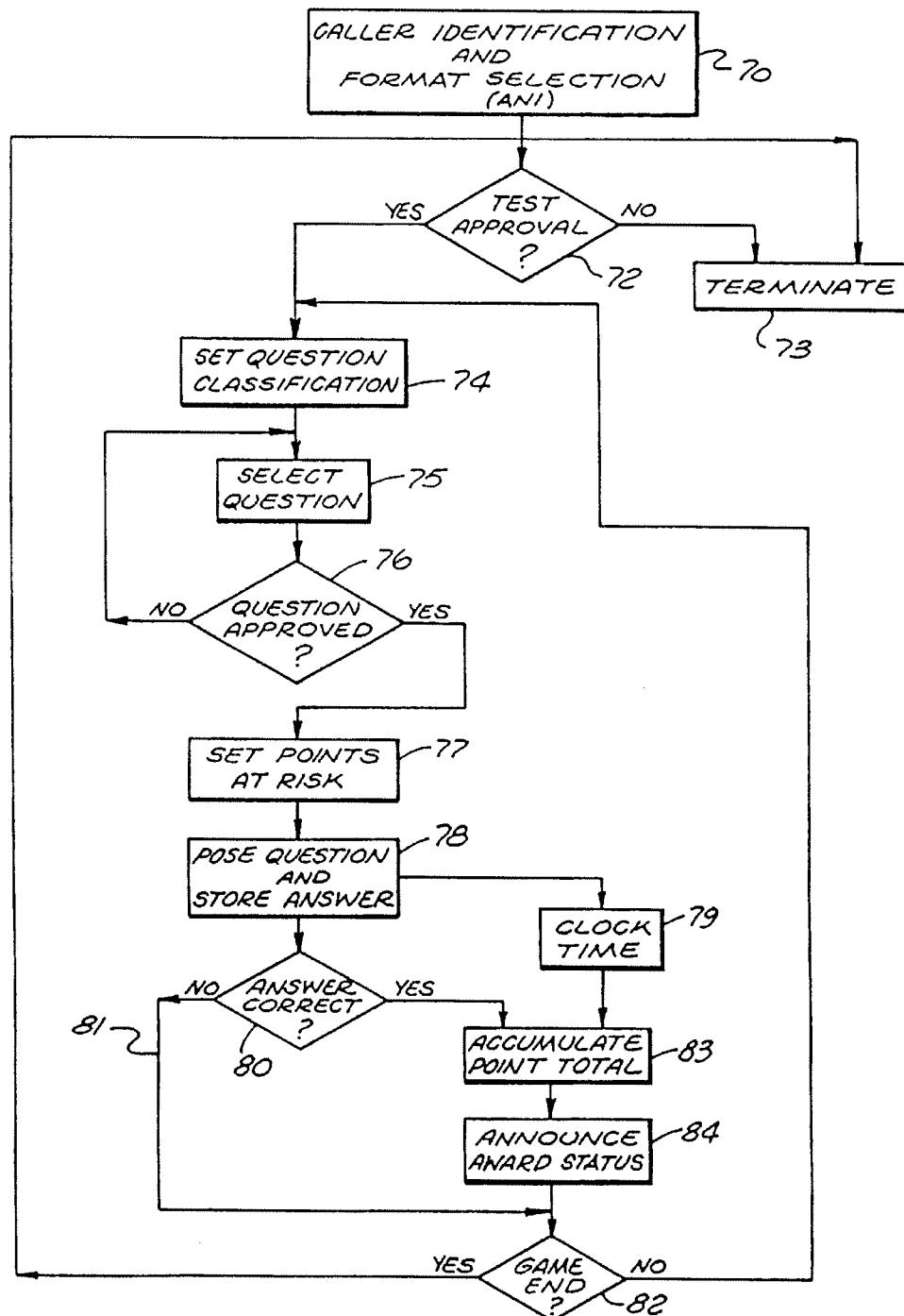


FIG. 3

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1**TELEPHONIC-INTERFACE GAME
CONTROL SYSTEM****RELATED CASES**

This is a continuation of application Ser. No. 09/128,936 filed Aug. 5, 1998, and entitled "Telephonic-Interface Game Control System," now U.S. Pat. No. 6,151,387 which is a continuation of application Ser. No. 08/559,538 filed Nov. 16, 1995, and entitled "Telephonic-Interface Game Control System," now U.S. Pat. No. 5,793,846, which was a continuation of application Ser. No. 08/073,585 filed Jun. 7, 1993, and entitled "Telephonic-Interface Game Control System," now U.S. Pat. No. 5,553,120, which was a continuation of application Ser. No. 07/534,907 filed Jun. 8, 1990, and entitled "Telephonic-Interface Game Control System," now U.S. Pat. No. 5,218,631, which was a continuation-in-part of application Ser. No. 07/335,923 filed Apr. 10, 1989, and entitled "Telephonic-Interface Statistical Analysis System" U.S. Pat. No. 6,016,344," which was a continuation of application Ser. No. 07/194,258 filed May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which was a continuation-in-part of application Ser. No. 07/018,244 filed Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which was a continuation-in-part of application Ser. No. 06/753,299 filed Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned.

**BACKGROUND AND SUMMARY OF THE
INVENTION**

Also, application Ser. No. 08/559,538 is directly a continuation-in-part of application Ser. No. 07/335,923 filed Apr. 10, 1989, and entitled "Telephonic-Interface Statistical Analysis System," which was a continuation of application Ser. No. 07/194,258 filed May 16, 1988, and entitled "Telephonic-Interface Statistical Analysis System," now U.S. Pat. No. 4,845,739, which was a continuation-in-part of application Ser. No. 07/018,244 filed on Feb. 24, 1987, and entitled "Statistical Analysis System For Use With Public Communication Facility," now U.S. Pat. No. 4,792,968, which was a continuation-in-part of application Ser. No. 06/753,299 filed on Jul. 10, 1985, and entitled "Statistical Analysis System For Use With Public Communication Facility," now abandoned. The benefit of the earlier filing dates in the United States is claimed under 35 U.S.C. § 120.

PRIOR-ART CONSIDERATIONS

To efficiently accomplish various functions, it has been proposed to interface persons at telephone calling terminals directly with a computer facility. In accordance with such arrangements, computer-generated voice messages prompt callers to provide digital data by actuating the numeric buttons that are conventionally employed for dialing from one telephone terminal to another. Such techniques have been widely used; however, a need exists for expanded operating capabilities, as to accommodate various game formats.

INVENTION SUMMARY

In general, the present invention comprises a telephonic-interface system and related processes for selectively utilizing both analog (voice) and digital telephonic communication in a variety of different game formats or programs, as

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to accommodate a vast number of participants. For example, after approval of a caller (based on telephone number signals) calls are accepted, designations are provided and a voice generator prompts individual callers to provide digital data for a game record. An information acquisition phase may be concurrent or consecutive with respect to an information processing phase. In accordance with various game formats, acquired data is processed to accomplish the functional operations, as for a contest, a lottery, and so on.

In specific implementations or formats, the system may use various criteria as a basis for awarding credits or points to callers, e.g. interrelated processing or processing with external data, source or random. Formats may make awards for proper responses, as question answers. Also, time may be introduced as a factor in relation to awards. Questions to callers may be variously selected, as from memory banks classified with varying orders of difficulty. Also, progressive stages of play may be invoked in a format to selectively access certain awards during a single call or a series of calls to isolate subsets and sub-subsets of callers. In that regard, award points may be tallied and accessible in a cache memory for prompt accounting reports. Thus, point accounts may be reported, individually or relatively.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, which constitute a part of this specification, exemplary embodiments exhibiting various objectives and features hereof are set forth, specifically:

FIG. 1 is a block diagram of a system constructed in accordance with the present invention;

FIG. 2 is a fragmentary diagrammatic representation of a storage cell format as may be developed in the system of **FIG. 1**;

FIG. 3 is a flow diagram of one operating format of the system of **FIG. 1**; and

FIG. 4 is a block diagram of a processor or function unit as may be employed in the system of **FIG. 1**.

**DESCRIPTION OF THE ILLUSTRATIVE
EMBODIMENT**

As required, a detailed illustrative embodiment of the present invention is disclosed herein. However, physical communication systems, data formats, and operating structures in accordance with the present invention may be embodied in a wide variety of forms, some of which may be quite different from those of the disclosed embodiment. Consequently, the specific structural and functional details disclosed herein are merely representative; yet in that regard, they are deemed to afford the best embodiment for purposes of disclosure and to provide a basis for the claims herein which define the scope of the present invention.

Referring initially to **FIG. 1**, a series of remote telephone-instrument terminals **T1** through **Tn** are represented (left). The terminals are generally similar, and accordingly, only the terminal **T1** is shown in any detail. The exemplary telephone terminal **T1** is represented to include a hand piece **10** (microphone and earphone) and a panel **12** provided with a rectangular array of push buttons **14** in the conventional configuration. Of course, the hand piece **10** accommodates analog signals while the panel **12** is a digital apparatus. Generally in accordance herewith, the hand piece **10** serves to manifest vocal prompts or cues to the caller.

In accordance with conventional telephone practice, alphabetic and numeric designations are provided on the buttons **14**. For example, several of the buttons **14** carry

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three letters along with a decimal digit. Specifically, the button designated with the numeral "2" also carries the letters "A", "B" and "C". In that manner, the buttons 14 encompass the numerals "0-9", two symbols, and the alphabet except for the letters "Q" and "Z". Consequently, the buttons 14 accommodate the entry of decimal data, and to some extent alphabetic data.

The buttons 14, designated with symbols and "*" and "#", along with the numeral "0" can be used by predetermined assignment to represent the letters "Q" and "Z" or any of a variety of other data or command components.

The remote terminals T1 through Tn represent a multitude of conventional telephone terminals coupled to a communication facility CO that may take the form of a comprehensive public telephone system. In accordance with the present system, the terminals T1-Tn operate through the telephone communication facility CO to be coupled with a central station CS.

Generally in accordance with the present development, individual callers use the individual telephone terminals T1 through Tn to interface the station CS (in a game format) through the communication facility CO. Depending on individual formats, the data of individual callers may be collected, correlated and tested by the station CS according to programs and external data. As a result, a select subset of the callers may be isolated and identified.

At any instant of time, the collective interface involving the communication system CO and the processing station CS may involve calls from several thousand of the terminals T1-Tn. Accordingly, the station CS may take the form of a sizable computer or mainframe. Although numerous possible configurations are available, for purposes of convenient illustration and explanation, the central station CS of the disclosed embodiment includes a plurality of audio response units AR1-ARn (left) and cooperating individual processors IP1-IPn (lower right) coupled to receive call data, as through a call distributor (not shown).

At this stage, some specific aspects of the communication interface are noteworthy. Generally, by telephonic dialing, the communication facility CO couples select terminals T1-Tn to select of the audio response units AR1-ARn. For example, as a result of dialing a specific telephone number at the remote terminal unit T1, the communication facility CO might couple the terminal unit through one of several sets of lines LS1-LSn to the audio response unit AR1. The caller at the terminal T1 accordingly is ultimately interfaced in a game format with the processor IP1.

From the audio response units AR1-ARn, lines LS1-LSn pass through a switch coupler 22 for select communication with the individual interface format processors IP1-IPn. As indicated above, while the interface processors IP1-IPn are illustrated as separate and distinct units, it is to be understood that various structural processing combinations based on time sharing, parallel processing, compiler techniques, bus technologies and other well known computer techniques may be employed variously to accomplish the objective processing as explained in detail below. As the processors IP1-IPn are similar, only the processor IP1 is shown in any detail in FIG. 1. Note also that various of the structures and functions of the processors IP1-IPn may be incorporated in the units AR1-ARn. Of course, specific arrangements and configurations will likely be implemented based on currently available hardware and software.

The coupler 22 also is connected to a master control and memory unit 24 which incorporates substantial memory and programmable computing capability. The unit 24 is associa-

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tively coupled to: a cache memory 23 (right), a manual terminal 25 (upper left), a question memory bank 27 (upper right), a calling number test unit 29 (lower left) and through a crossbar 26 (below) to the processors P1-IPn. Note that both the function and structure of cache memories for storing current data and crossbars for selectively interconnecting multiple parallel structures are well known in the computer arts. For a detailed description of cache memories and crossbars, see the book, "High-Performance Computer Architecture" by Harold S. Stone, published by Addison-Wesley Publishing Company, 1987.

The calling-number test unit 29 (lower left) essentially is a comparator or coincidence device. For example, the unit 29 may take the form of a look-up table for storing negative telephone numbers that are unacceptable. The number received in conjunction with a call, as by automatic number identification (ANI) equipment is supplied through a receiving unit AR1-ARn before the call is "answered". If addressing the look-up table (negative list) in the test unit 29 with the calling number indicates registration of the number, a busy signal generator 31 is actuated and the involved unit AR1-ARn supplies a busy signal to the caller, declining the call.

Accordingly, as described in detail below, disqualified calling numbers are rejected before being "answered".

As indicated above, the coupler 22 functions as a switch as well known in the prior art to establish line couplings from one of the audio response units (AR1-ARn) to one of the interface processors IP1-IPn. The operation of the coupler 22 is implemented in association with the unit 24 which may be programmed to execute specific control and memory functions as detailed below. Again the division of functions between the unit 24, the units AR1-ARn and the processors IP1-IPn may vary considerably depending on available structures and techniques. Accordingly, the disclosed system is deemed to be merely exemplary.

Generally, the interface processors IP1-IPn receive basic record data from the unit 24 and current data from the terminals T1-Tn. In a multiple format configuration, operating program data either may be initially developed in the processors IP1-IPn or supplied from the unit 24. In any exemplary format, a packet of data is assembled in one of the processors IP1-IPn during an interface with one of the terminal units T1-Tn. After being organized in a cell, the data packet may be stored in the unit 24 for subsequent use. Accordingly, an inventory of game participants is developed with their data cells available for repeated use. Concurrently, significant data, as for example data relating to the highest current game scores, may be abstracted in the cache memory 23 for prompt reporting.

Of the wide variety of operating formats and game applications accommodated by the present system, it will be apparent that certain elements have reoccurring significance in various combinations. Specifically, such elements include: (1) utilizing the called telephone number to select a specific operating format, (2) screening or selecting callers who will be accepted based on various criteria including received telephone numbers (ANI, DNIS) for screening before call acceptance (going off hook), (3) designating callers, as with manually or automatically provided telephone number data or computer-generated designations to enable subsequent positive identification, (4) providing a selection of cues (questions) for callers as from data banks of various difficulty levels, (5) enabling callers to specify degrees of risk (points), (6) relating response data (answers) to time as a further criterion, (7) using external data (random

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or source) for processing caller data to isolate a subset (or series of subsets) as by interrelated or independent processing, and (8) accumulating caller scores over a substantial period with key data abstracted for easy access (cache).

With respect to the data processing aspects, exemplary elemental features include the utilization of external data not available during the interval of gathering data, the utilization of an interrelationship between the composite data collected during a data acquisition period, and the utilization of time or sequence as a criterion to determine a subset.

In the development of data cells, current data is provided from the master control and memory unit 24 and the question memory 27 for interfacing a caller. Specifically, as indicated above, the unit 24 incorporates a memory for storing individual caller cells addressed by caller identification. Accordingly, records are created and maintained on individual callers indicative of identification, qualification and the results of participation in a game of games.

For use in association with various games, the question memory 27 incorporates a plurality of question banks Q1-Qn, each storing questions of different classification as with respect to difficulty. For example, the question bank Q1 may store relatively easy questions, with the level of difficulty progressively increasing through the question banks to the bank Qn. Accordingly, the master control and memory unit 24 may be actuated in accordance with a format to select questions of a predetermined character by designating a specific one of the banks Q1-Qn. Consider some specific operations as may be implemented with respect to the question memory 27. A telephone number alone may designate a specific question bank Q1-Qn, for example, the number being either "called" or "calling" and provided automatically (ANI, DNIS) or manually.

In a more elaborate example, telephone numbers provided automatically may be compared with telephone numbers provided manually to access a select question bank Q1-Qn only in the event of coincidence. Also, telephone numbers may be used in logic combinations with other data to select a question bank Q1-Qn. To consider some examples, a simple application might eliminate a bank of questions used previously in an interface with a calling number. Alternatively, banks may be eliminated if used previously for either or both of an automatically provided number and a manually provided number. Of course, inconsistent numbers might also prompt further programmed inquiries.

The selection of a question bank also may be based on other data, as data generated during an interface. For example, questions of progressive orders of difficulty may be propounded as a sequence interrupted by a incorrect answer.

Returning to the structure of the master control and memory unit 24 and its related operations, data cells DS are stored for each caller and may involve a format as illustrated in FIG. 2. Specifically, a block 52 is indicated to represent a field for a caller's established identification. A block 53 carries a computer-generated designation for the caller. A block 54 indicates a prohibition field designating a caller either as being totally prohibited or prohibited with respect to certain game formats. As indicated above, a negative list of prohibited callers may alternatively or also be stored as a look-up table.

The balance of the data cell DS is dedicated to game format sections G1-Gn. In FIG. 2, three exemplary game sections are illustrated. Specifically, in a game section G1, designated field 55 carries a call record (times, questions,

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answers and awards), a field 56 indicates a caller's current award record, and a field 58 indicates a caller's status. Generally, variations or duplicates of the fields 55, 56 and 58 are provided in game sections G2-Gn for alternative game formats. Games may vary widely with caller data processed accordingly. For example, caller data may be processed individually or in interrelated patterns, as with reference to external data (random or source) to establish winners as subsets or progressive subsets.

To consider a specific example, a format now will be described wherein television viewers participate in a game show for prizes. Along with expanding participation of television viewers in a program, the format also has the potential of expanding general program interest.

Game shows for the exemplary format may take any of a wide variety of different forms in which studio contestants compete for prizes. However, in utilizing the system of the present invention to involve remote participants, it may be desirable to preliminarily qualify and designate callers. Specifically, prior to participating in a game, interested participants might interface the system as depicted in FIG. 1. In the course of an exchange, a data cell is initiated for each caller in the unit 24. The initial fields 52, 53 and possibly 54 are accordingly loaded.

With preregistration, at the time of participation, callers are qualified, initially by avoiding a negative list then by presence on a positive list, as by reference to an assigned memory cell. Thereafter, the interface data is received to supplement prior data. For example, a caller might select a studio audience participant with whom the caller is to be allied. The interface operation essentially may involve a voice generator in the associated audio response unit, e.g. unit ARI (FIG. 1) receiving cue signals from the processor IP1 to activate the remote telephone unit T1 to speak an instruction: "If you wish to play with Player No. 1, please push button No. 1; if you wish to play with Player No. 2, please push button No. 2... and so on". The caller also may be instructed to indicate the extent of a wager (points at risk). For example, "Push the number button indicating the points you wish to risk".

The received participant data or computed result data is stored in the active processor IP1 for return to an assigned cell in the unit 24. Scores are compared or otherwise interrelated between individual processors IP1-IPn to provide an abstract of key data in the cache memory 23. For example, the highest scores may be stored so that caller reports may cover a participant's score as well as indicating the significance of that score to others. A report message might state: "Your score is now 537. The highest score is 641 and the average score is 316. Good luck." Thus, individual accounts can be given for each of the calling participants dependent upon their success in association with a studio player. Thus, after an interval of play, the processing units, as the unit 92 (FIG. 4), may isolate a subset of scores in the cache memory 23. Of course, various arrangements may be provided ultimately for rewarding a select subset of winners or persons qualified for play at a higher level.

As explained, the above format generally involves a real-time game show with an on-line operating format. A somewhat similar format may involve non-real-time operation and in that sense, callers may interface the system of the present invention before and after the show; however, not primarily during the show. As examples, such a game format might involve: a quiz for callers based on their ability to perceive and remember occurrences within the show, a word game (Scrabble) or any of a multitude of games involving knowledge, time, random events and so on.

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As indicated above, a multitude of game formats may be executed based on an elemental operating process hereof as will now be considered with reference to FIG. 3. An initial operation involves caller identification and format selection. As indicated above, caller identification may have been previously established or may be established preliminarily in the course of a call to participate in a game. Caller identification may involve telephone terminal data as provided by ANI telephone equipment. Also, the designation of a specific format at the central station CS may be commanded on the basis of the called telephone number (may be provided by DNIS telephonic equipment). Thus, in certain instances, the caller identification and the format selection may occur with no conscious involvement by the caller. These operations are represented by the block 70 in FIG. 3.

With the identification of a caller, as represented in FIG. 3, the next step involves approving the caller for participation as represented by the query block 72. For example, callers might be tested in relation to negative or positive lists, personal identification numbers may be checked, a use-rate calculator may be involved or a caller may be tested or qualified with respect to various payment schemes. Accordingly, individual callers are ultimately either approved or disapproved.

As indicated above, calls that are determined to be unqualified based on ANI signals may be rejected without completing a communication circuit, i.e. "answering". Otherwise, callers disapproved from the test block 72 receive a termination message as represented by the block 73. The termination procedure may be variously formed, as with a spoken message or signals prompting the caller to hang up.

Approved callers encounter the next step in the process as represented by the block 74 involving the selection of a desired class of questions. Of course, specific formats may vary widely; however, as a simple example, with correct answers, a caller might be given questions in an increasing order of difficulty. Alternatively, orders of difficulty may be related to individual calls for participation in the game. As still another possibility, orders of difficulty may be related to a scale of risk, reward or be the choice of the caller. In any event, determining an order of difficulty prompts the master control and memory unit 24 (FIG. 1) to draw a stored question from a select one of the memory banks Q1-Qn. Thus, a question is selected in a process step as indicated by a block 75 (FIG. 3).

Selected questions are tested as indicated by a query block 76. For example, selected questions may be compared with previous questions propounded to a caller (stored in the field 55) so as to avoid duplications. If a question is determined to be duplicative, or otherwise inappropriate, the process returns to the step of block 75 for the selection of another question.

With the selection of an approved question, the process proceeds to the next step of determining the risk to be undertaken by the caller (block 77). For example, a caller may be instructed to indicate the extent of a wager. Specifically, the Q might be: "Please push the number button indicating the points you wish to risk". As represented in FIG. 3 by the block 77, the step establishes a degree of risk for the caller.

With the degree of risk determined and the question selected, the question is vocalized to the caller as indicated by block 78. Typically, the question may be answered by depressing a button or buttons 14 (FIG. 1) at the remote terminal T1. For example, "What are the initials of the fourth President of the United States?"

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With the posing of a question, a time clock is checked as indicated by the block 79 for determining the interval between question and correct answer. A query block 80 represents the determination of whether or not a correct answer is received. If a correct answer is not received, the operation advances to a query block 82: "Game End?" as discussed below.

A correct answer advances the process from the step of the block 80 to a step represented by a block 83, i.e. of accumulating the award points. The step of the block 83 involves the determination of a correct answer (block 80) and the time required for the correct answer (block 79). A combination of time and the correct answer resolves the award points that are accumulated with any prior or existing point total as represented by the block 83. The resulting total is announced to the caller in a step illustrated by block 84. As explained above, the announcement may refer to comparative significant scores. As a part of a winning step in the process, the caller may be placed in direct vocal communication with an operator. Specifically, the unit 24 (FIG. 1) couples the call to the terminal 25 and supplies related prompting data for display.

The step of announcing a total point count to a caller advances the process to the query represented by block 82, i.e. determine whether or not the game phase has ended. If the game phase has ended, the process proceeds to the termination step as indicated by the block 73 (upper right). If the game phase has not ended, the process returns to the block 74, involving the preliminary step of selecting a question. Of course, the game may involve one or several questions during the course of each telephone call. At the end of a game phase, the data is returned to the unit 24 as for processing or future retrieval during another game phase.

The process as illustrated in FIG. 3 is executed in the system of FIG. 1 by an association between one of the processors IP1-IPn and the master control and memory unit 24 along with the question memory 27. Considering the processor IP1 generally, with the qualification of a call, a data cell for the caller is established in a data store 90 in the processor IP1. Somewhat similarly, the game format for the call is set in a control unit 92 within the processor IP1.

Also, with the operation of setting up the processor IP1, the master control and memory unit 24 functions with the question memory 27 and a specific one of the question banks Q1-Qn to isolate an operative question that is stored in a question unit 94 of the processor IP1. The select question is propounded to the caller through the coupler 22 and an audio response unit, e.g. unit AR1. Cued by the question (audio), the caller is expected to key in an answer to provide digital response data. Upon the occurrence of a correct answer, a point accumulator 96 (processor IP1) in combination with a clock 98 (processor IP1) determines a point award that is accumulated in the caller data store 90. Thus, the process proceeds until the call is terminated with the possibility of the caller acquiring points according to the predetermined operating format.

The components of the processor IP1 are shown in FIG. 4 arranged and inter coupled for operation. Note that similar identification numerals appear in FIGS. 1 and 4.

To treat an illustrative operation comprehensively with reference to FIGS. 1 and 4, again assume an exemplary format that is associated with a television broadcast. Specifically, after watching the broadcast of a television show (possibly a serial episode) the participant actuates the push buttons 14 at one of the remote terminals T1-Tn to accomplish an interface communication with the select

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operating format. For example, the caller may actuate the buttons 14 for the station number "1-900-555-7777" to identify the game format of current description.

With the responsive operation of the communication facility CO, the caller is coupled to an audio response unit, e.g. unit ARI. A further connection is made from the audio response unit ARI through the coupler 22 to the unit 24.

Operating through the communication facility CO, one of the audio response units ARI-ARn, the coupler 22 and the master unit 24, the initial contact may be variously implemented. For example, a call signal as provided to a select audio response unit ARI may include representations of the caller's number and, accordingly, access a data cell on the caller. A general negative file may be carried in the master unit 24.

Recognizing the various possibilities, assume that at the outset of the interface, a voice generator in the audio response unit AR1 is actuated by the unit 24 to greet the caller. For example, the caller might be greeted: "Thank you for calling XYZ Company to participate in the XYZ Game".

As explained above, the caller may be variously qualified, for example, in a format to determine if the caller is registered, has a proper identification or has a key number. In any event, at some stage of operation, the master unit 24 provides the data cell for the caller to the processor IP1 which is stored in the caller register 90 (FIG. 4). As suggested above, if no data exists on the caller, the operating format may variously qualify or condition the caller with the result that data is established for the caller as indicated in FIG. 2.

In executing the specific process of a format, the control unit 92 (FIG. 4) provides timing signals t1-t6 to sequence specific components. Generally, the individual operations attendant each of the timing intervals (manifest by the high level of a binary signal) are as follows:

Interval or Signal	Function
t1	store tentative question
t2	check tentative question
t3	register question and determine risk points
t4	operative question exchange interval (cue and response)
t5	award points
t6	accumulate points-and store

To consider the overall operation as related to structure, the master unit 24 (FIG. 1) operates with one of the audio response units AR1-ARn initially to establish criterion for selecting a question. The criterion may involve the status of the caller, the sequence of the format, the nature of the game, or any of various other considerations. However, it is important to appreciate that the question memory 27 (FIG. 1) incorporates a multitude of banks Q1-Qn each of which contains questions serving different criteria, e.g. different levels of difficulty. Essentially, each question within each of the banks Q1-Qn is addressed by a specific designation which also indicates a class of question.

Upon the selection of a class of question, a specific tentative question is identified and an identification code is placed in a question identification storage 101 (FIG. 4) contained within the question unit 94. Accordingly, the identified question is tested against previous questions posed to the caller. Specifically, the record of the caller's data cell (FIG. 2) includes identification of prior questions posed. The identifications of those questions are sequentially supplied

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from the register 90 (FIG. 4) to a comparator 103 that is also coupled to the store 101. If a coincidence occurs, a signal is provided from the comparator 103 to the control unit 92 commanding the master unit 24 (FIG. 1) to select another tentative question. The test operation is then repeated as indicated by the block 76 in FIG. 3.

If no coincidence is detected between the prior and the tentative question, the comparator 103 (FIG. 4) provides a signal to a buffer 107 for accepting the question. Specifically, upon approval of a question, the master unit 24 (FIG. 1) addresses the select memory bank (Q1-Qn) to supply the selected question through the crossbar 26 and the control unit 92 (FIG. 4) to be registered in the buffer 107.

Concurrently with the operation of selecting a question for a specific interface, the system determines the degree of risk involved with the question. Specifically, as explained above, the caller may interface the master unit 24 through one of the audio response units AR1-ARn to establish points at risk, the value of which is represented by signals supplied through the crossbar 26 (FIG. 1) to the control unit 92 (FIG. 4) and set in a risk points buffer 111. Accordingly, with the degree of risk established (buffer 111) and the question established (buffer 107) the system proceeds to cue the caller with the select question.

The caller's answer is reduced to a digital format as a result of actuating the keys 14 at the remote terminal. Accordingly, digital signals are provided through the communication facility CO and the audio response unit ARI to the coupler 22 interfacing the processor IP1. Within the processor IP1, the control unit 92 tests the answer while metering the time required for the answer. Typically, the timing will be in terms of seconds. The control unit determines whether or not the answer is correct and if so, the amount of time required for the answer. As a result, factors may be determined as by the use of a simple look-up table. For example, if a correct answer is provided within two seconds, a factor of "3.0" may be formulated. A correct answer within five seconds might produce a factor of "2.5" while a correct answer within seven seconds produces a multiplier factor of "2.0".

Signals representative of the multiplier factor are provided from the control unit 92 to a multiplier 113 that is also coupled to receive signals representative of the risk points from the buffer 111. Accordingly, the value of the risk points is multiplied by the determined factor to produce a product supplied to the point accumulator 96 to be added to the residual value. Accordingly, a fresh accumulation is determined. Of course, if the correct answer is not provided, the multiplier 113 is dormant with the consequence that the caller is left with the residue of points in the accumulator 96 remaining after withdrawing the points-at-risk.

After each cycle of processing a question, the accumulated points may be announced to the caller simply by actuating the audio response unit ARI. As indicated above with respect to FIG. 3, when the game is concluded, the call is terminated in accordance with a predetermined subformat.

In relation to the disclosed embodiment, it may be seen that the system affords certain distinct features important with respect to interface operation. Specifically, the provision of a plurality of data banks within a question memory accommodates various formats for question selection, e.g. order of difficulty, format state, geographic location and so on. Also, the feature allowing a caller to determine the points at risk affords considerable flexibility of operation with attendant caller participation. The feature incorporating time

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as a criterion for awards also affords considerable flexibility in formulating effective game formats.

Furthermore, depending on the detailed operation of the system, individual data packets for cells of callers afford an effective technique for accumulating data over a progressive game period. In a related context, qualification of callers is significant in general and particularly noteworthy in relation to declining select calls before "answering".

In view of the above description, it will be apparent that the system of the present invention may be effectively used in telephonic interfaces to accommodate flexibility and control by a caller in accordance with a predetermined format. Although the disclosed embodiment is directed to a game operation, it will be apparent that the system may be variously embodied to accommodate a wide variety of telephonic interface operations. Furthermore, it will be apparent that while the disclosed embodiment comprises specific elements and configurations, any of a variety of structures might well be utilized. Accordingly, the scope hereof is deemed to be as set forth in the claims below.

What is claimed is:

1. A process for determining the acceptability of calls and executing formats in association with a communication facility including remote terminal apparatus for individual callers, wherein said remote terminal apparatus includes a telephonic instrument with voice communication means and digital input means in the form of an array of alphabetic, numeric buttons for providing data, said process including the steps of:

receiving associated telephone number signals upon the instance of a call from one of said remote terminal apparatus;

testing said associated telephone number signals with respect to stored negative data to determine the acceptability of said call from said one of said remote terminal apparatus as indicated by an acceptability signal;

accepting said call from said one of said remote terminal apparatus conditioned on said acceptability signal;

interfacing via said communication facility to accepted calls to provide voice signals for cueing callers and receiving responsive digital data in accordance with a select format; and

testing at least certain of the responsive digital data against stored positive data to determine if further voice signals for cueing callers should be provided.

2. A process according to claim 1 wherein said step of receiving associated telephone number signals includes receiving data represented by number identification signals provided automatically by said communication facility to indicate called or calling numbers.

3. A process according to claim 1 wherein said step of testing is accomplished prior to accepting said call whereby audio communication is not established for calls that are not accepted.

4. A process according to claim 1, further comprising the step of:

transferring calls for which no acceptability signal is received to a manual terminal for direct communication.

5. A process according to claim 1, wherein the select format is selected from plurality of formats based on dialed number identification signals automatically received from the communication facility.

6. A process according to claim 1, wherein the stored negative data includes a list of unacceptable numbers.

7. A process according to claim 6, wherein the responsive digital data include identification data entered by the callers

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and the callers are further qualified based on the caller identification data.

8. A process according to claim 7, wherein the identification data includes social security number data for the callers.

9. A process according to claim 4, wherein an operator enters data at the manual terminal.

10. A process according to claim 4, further comprising the step of:

10 storing at least a portion of the data entered by the operator.

11. A system for determining the acceptability of calls and executing certain operations of telephonic formats in association with a communication facility including remote terminal apparatus for individual callers, wherein said remote terminal apparatus includes a telephonic instrument with voice communication means and digital input means in the form of an array of alphabetic, numeric buttons for providing data, said system comprising:

mean for receiving associated telephone number signals upon the instance of a call from one of said remote terminal apparatus;

means for testing said associated telephone number signals with respect to stored negative data to determine the acceptability of said call from said one of said remote terminal apparatus as indicated by an acceptability signal;

means for accepting said call from said one of said remote terminal apparatus conditioned on said acceptability signal;

means for interfacing said communication facility to provide voice signals for cueing callers and receiving responsive digital data in accordance with a select format to accepted calls; and

testing at least certain of the responsive digital data against stored positive data to determine if further voice signals for cueing callers should be provided.

12. A system according to claim 11, further comprising: a manual terminal to which calls are transferred for which no acceptability signal is received.

13. A system according to claim 11, wherein the select format is selected from a plurality of formats based on dialed number identification signals automatically received from the communication facility.

14. A system according to claim 11, wherein the stored negative data includes a list of unacceptable numbers.

15. A system according to claim 14, wherein the responsive digital data includes identification data entered by the callers and the callers are further qualified based on the caller identification data.

16. A system according to claim 15, wherein the identification data includes social security number data for the callers.

17. A system according to claim 12, wherein an operator enters data at the manual terminal.

18. A system according to claim 12, further comprising: storing at least a portion of the data entered by the operator.

19. A system according to claim 16, wherein the associated telephone number signals are received automatically from the communication facility (ANI).

20. A method for determining the acceptability of calls and executing certain operations of telephonic formats in association with a communication facility including remote terminal apparatus for the individual callers, wherein said remote terminal apparatus includes a telephonic instrument

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with voice communication means and digital input means in the form of an array of alphabetic, numeric buttons for providing data, including the steps of:

receiving associated telephone number signals automatically provided by the communication facility upon the instance of a call from one of said remote terminal apparatus;

testing said associated telephone number signals with respect to stored data to determine the acceptability of said call from said one of said remote terminal apparatus; and

selectively providing one or more cues to said one of said remote terminal apparatus and providing at least one cue depending upon the associated telephone number signals for said call from said one of said remote terminal apparatus in accordance with a select format.

21. A method according to claim **20**, further comprising the step of:

testing said associated telephone number signals against stored negative telephone numbers that are unacceptable.

22. A method according to claim **20**, further comprising the step of:

transferring said call to a manual terminal based on a condition and displaying data relating to said caller.

23. A method according to claim **20**, wherein the select format is identified from one of a plurality of formats based on dialed number identification signals automatically provided by the communication facility.

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24. A method according to claim **20**, wherein at least one cue indicates on-going accounting data during said call.

25. A method according to claim **20**, further comprising the step of:

receiving digital data in accordance with the select format responsive to at least one cue.

26. A method according to claim **25**, further comprising the step of:

further testing and qualifying callers based on a one time use test.

27. A method according to claim **25**, wherein the callers are further qualified based on the associated telephone number signals or caller identification data entered as digital data responsive to the cue or both.

28. A method according to claim **27**, wherein the caller identification data is social security data.

29. A method according to claim **27**, further comprising the step of:

transferring said call to a manual terminal for direct communication.

30. A method according to claim **29**, wherein data for a caller is entered at the manual terminal.

31. A method according to claim **22**, wherein the displaying of the data relating to the caller is based on the associated telephone number signals relating to the call.

32. A method according to claim **22**, wherein the data relating to the caller includes caller entered data.

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